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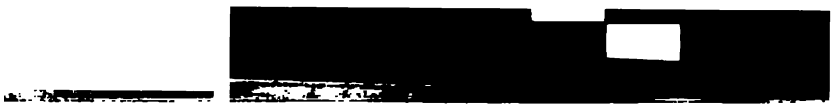

MYSTERIOUS PSYCHIC FORCES

MYSTERIOUS PSYCHIC FORCES

AN ACCOUNT OF THE AUTHOR'S INVESTIGATIONS IN PSYCHICAL RESEARCH, TOGETHER WITH THOSE OF OTHER EUROPEAN SAVANTS

BY

CAMILLE FLAMMARION

Director of Observatory of Jovisy, France. Author of "The Unknown," "The Atmosphere," etc.

BOSTON
SMALL, MAYNARD AND COMPANY
1909

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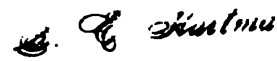

He who pronounces anything to be "impossible," outside of the field of pure mathematics, is wanting in prudence.

FRANCOIS ARAGO.

A learned pedant who laughs at the possible comes very near being an idiot. To purposely shun a fact, and turn one's back upon it with a supercilious smile, is to bankrupt Truth.

VICTOR HUGO.

Science is under bonds, by the eternal principles of honor, to look fearlessly in the face every problem that is presented to her.

SIR WILLIAM THOMPSON.

PREFACE

The subject treated in the following pages has made great progress in the course of forty years. Now what we are concerned with in psychical studies is always unknown forces, and these forces must belong to the natural order, for nature embraces the entire universe, and everything is therefore under the sway of her sceptre.

I do not conceal from myself, however, that the present work will excite discussion and bring forth legimate objections, and will only satisfy independent and unbiased investigators. But nothing is rarer upon our planet than an independent and absolutely untrammelled mind, nor is anything rarer than a true scientific spirit of inquiry, freed from all personal interest. Most readers will say: "What is there in these studies, anyway? The lifting of tables, the moving of various pieces of furniture, the displacement of easy-chairs, the rising and falling of pianos, the blowing about of curtains, mysterious rappings, responses to mental questions, dictations of sentences in reverse order, apparitions of hands, of heads, or of spectral figures,— these are only common place trivialities or cheap hoaxes, unworthy to occupy the attention of a scientist or scholar. And what would it all prove even if it were true? That kind of thing does not interest us."

Well, there are people upon whose heads the sky might tumble without causing them any unusual emotion.

But I reply: What! is it nothing to know, to prove, to see with one's own eyes, that there are unknown forces around us? Is it nothing to study our own proper nature and our

own faculties? Are not the mysterious problems of our being such as are worthy to be inscribed on the program of our investigation, and of having devoted to them laborious nights and days? Of course, the independent seeker gets no thanks from anybody for his toil. But what of that? We work for the pleasure of working, of fathoming the secrets of nature, and of instructing ourselves. When, in studying the double stars at the Paris Observatory and cataloguing these celestial twins, I established for the first time a natural classification of those distant orbs; when I discovered stellar systems, composed of several stars, swept onward through immensity by one common impulse; when I studied the planet Mars and compared all the observations made during two hundred years in order to obtain at once an analysis and a synthesis of this next-door neighbor of ours among the planets; when, in examining the effect of solar radiations I created the new branch of physics to which has been given the name "radioculture" and caused variations of the most radical and sweeping nature in the dimensions, the forms, and the colors of certain plants; when I discovered that a grasshopper, eviscerated and kept in straw did not die, and that these insects can live for a fortnight after having had their heads cut off; when I planted in a conservatory of the Museum of Natural History, in Paris, one of the ordinary oaks of our woods (*quercus robur*), thinking that, if withdrawn from the changes of seasons, it would always have green leaves (a thing which everybody can prove),— when I was doing these things I was working for my own personal pleasure; but that is no reason why these studies have not been useful in the developing work of science, and no reason for their not being admitted within the scope of the practical work of specialists.

It is the same with these psychical studies of ours; only there is a little more passion and prejudice connected with

them. On the one hand, the sceptics cleave fast to their denials, convinced that they know all the forces of nature, that all mediums are humbugs, and all experimenters imbeciles. On the other hand, there are the credulous Spiritualists, who imagine they always have spirits at their beck and call in a centre-table, who evoke, with the utmost sang-froid, the spirits of Plato, Zoroaster, Jesus Christ, St. Augustine, Charlemagne, Shakespeare, Newton, or Napoleon, and who set about stoning me for the tenth or twentieth time, affirming that I am sold to the Institute on account of a deep-seated and obstinate ambition, and that I dare not declare myself in favor of the identity of the spirits for fear of annoying my illustrious friends. The individuals of this class refuse to be satisfied just as much as the first class.

So much the worse for them! I insist on only saying what I know; but I do say this.

And if what I know is displeasing, so much the worse for the prejudices, the general ignorance, and the good breeding of these distinguished gentry, in whose eyes the maximum of happiness consists in an increase of their fortune, the pursuit of lucrative places, sensual pleasures, automobile-racing, a box at the Opéra, or five-o'clock teas at a fashionable restaurant, and whose lives are frittered away along paths that never cross those of the rapt idealist, and who never know the pure satisfaction of his mind and heart, or the pleasures of thought and feeling.

As for me, a humble student of the prodigious problem of the universe, I am only a seeker. What are we? We have scarcely shed a ray more of light on this point than at the time when Socrates laid down, as a principle, the maxim, *Know thyself,*— notwithstanding we have measured the distances of the stars, analyzed the sun, and weighed the worlds of space. Does it stand to reason that the knowledge of ourselves should interest us less than that of the macrocosm, the

external world? It is not credible. Let us therefore study on, convinced that all sincere research will further the progress of humanity.

Juvisy Observatory, December, 1906.

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INTRODUCTION

As long ago as 1865 I published, under the title, *Unknown Natural Forces*, a little monograph of a hundred and fifty pages which is still occasionally found in the book-shops, but has not been reprinted. I reprint here (pp. xiii–xxiii), what I wrote at that time in this critical study "apropos of the phenomena produced by the Davenport brothers and mediums in general." It was published by Didier & Co., booksellers to the Academy, who had already issued my first two works, *The Plurality of Inhabited Worlds* and *Imaginary Worlds and Real Worlds*.

"France has just been engaged in an exciting debate, where the sound of voices was drowned in a great uproar, and out of which no conclusion has emerged. A disputation more noisy than intelligent has been raging around a whole group of unexplained facts, and so completely muddled the problem that, in place of illuminating it, the debate has only served to shroud it in deeper darkness.

"During the discussion a singular remark was frequently heard, to the effect that those who shouted the loudest in this court of assize were the very ones who were least informed on the subject. It was an amusing spectacle to see these persons in a death-grapple with mere phantoms. Panurge himself would have laughed at it.

"The result of the matter is that less is known to-day upon the subject in dispute than at the opening of the debates.

"In the mean time, seated upon neighboring heights were certain excellent old fellows who observed the writs of arrest

issued against the more violent combatants, but who remained for the most part grave and silent, though they occasionally smiled, and withal did a deal of hard thinking.

"I am going to state what weight should be given to the opinions of those of us who do not rashly affirm the impossibility of the facts now put under the ban and who do not add their voices to the dominant note of opposition.

"I do not conceal from myself the consequences of such sincerity. It requires a good deal of boldness to insist on affirming, *in the name of positive science,* the POSSIBILITY of these phenomena (wrongly styled supernatural), and to constitute one's self the champion of a cause apparently ridiculous, absurd, and dangerous, knowing, at the same time, that the avowed adherents of said cause have little standing in science, and that even its eminent partisans only venture to speak of their approval of it with bated breath. However, since the matter has just been treated momentarily in fugitive writings by a group of journalists whose exacting labors wholly forbid a study of the psychic and physical forces; and since, of all this multitude of writers, the greater part have only heaped error upon error, puerility upon extravagance; and since it appears from every page they have written (I hope they will pardon me) that not only are they ignorant of the very *a, b, c* of the subject they have so fantastically treated, but their opinions upon this class of facts rest upon no basis whatever,— therefore I have thought it would serve a purpose if I should leave, as a souvenir of the long wrangle, a piece of writing better based and buttressed than the lucubrations of the above-mentioned gentlemen. As a lover of truth, I am willing to face a thousand reproaches. Be it distinctly understood that I do not for a moment deem my judgment superior to that of my confrères, some of whom are in other respects highly gifted. The simple fact is that they are not familiar with this sub-

ject, but are straying in it at random, wandering through a strange region. They misunderstand the very terminology, and imagine that facts long ago well authenticated are impossible. By way of contrast, the writer of these lines will state that for several years he has been engaged in discussions and experiments upon the subject. (I am not speaking of historical studies.)

"Moreover, although the old saw would have us believe that 'it is not always desirable to state the truth,' yet, to speak frankly, I am so indignant at the overweening presumption of certain polemical opponents, and at the gall they have injected into the debate, that I do not hesitate to rise and point out to the deceived public that, *without a single exception,* all the arguments brought up by these writers, and upon which they have boldly planted their banner of victory, prove absolutely *nothing,* NOTHING, against the possible truth of the things which they, in the fury of their denial, have so perverted. Such a snarl of opinions must be analyzed. In brief, the true must be disentangled from the false. *Veritas, veritas!*"

"I hasten to anticipate a criticism on the part of my readers by apprising them, on the threshold of this plea, that I am not going to take the Davenport brothers as my subject, but only as the ostensible motive or pretext of the discussion,— as they have been, for that matter, of the majority of the discussions. I shall deal in these pages with *the facts* brought to the surface again by these two Americans,— facts inexplicable (which they have put on the stage at Herz Hall here in Paris, but which none the less existed before this *mise-en-scène,* and which none the less will exist even should the Davenport brothers' representations prove to be counterfeit),— things which others had already exhibited, and still exhibit with as much facility and under much better conditions; occurrences, in short, which constitute the

domain of the unknown forces to which have been given, one after another, five or six names explaining nothing. These forces, mind you, are as real as the attraction of gravitation, and as invisible as that. It is about facts that I here concern myself. Let them be brought to the light by Peter or by Paul, it concerns us little; let them be imitated by Sosie * or parodied by Harlequin, still less does it concern us. The question is, Do these facts exist, and do they enter into the category of known physical forces?

"It amazes me, every time I think of it, that the majority of men are so densely ignorant of the psychic phenomena in question, considering the fact that they have been known, studied, valued, and recorded for a good long time now by all who have impartially followed the movement of thought during the last few lustrums.

"I not only do not make common cause with the Davenport brothers, but I ought furthermore to add that I consider them as placed in a very compromising situation. In laying to the account of the supernatural matters in occult natural philosophy which have a tolerable resemblance to feats of prestidigitation, they appear to a curious public to add imposture to insolence. In setting a financial value upon their talents, they seem to the moralist, who is investigating still unexplained phenomena, to place themselves on the level of mountebanks. Whatever way you look at them, they are to blame. Accordingly, I condemn at once both their grave error in assuming to be superior to the forces of which they are only the instruments and the venal profit they draw from powers of which they are not master and which it is no merit of theirs to possess. In my opinion, it is a piece of exaggeration to draw conclusions from

* Sosie is a character in Plautus and Molière. Hermes takes Sosie's form, and, when the latter sees his double, he almost doubts his own identity. So the word came to mean a counterpart, a double, one's *alter ego*.—*Trans.*

these unhappy semblances of truth; and it is to abdicate one's right of private judgment to make one's self but the echo of the vulgar herd who hiss and shout themselves hoarse before the curtain rises. No, I am not the advocate of the two brothers, nor of their personal claims. For me, individual men do not exist. That which I defend is the superiority of nature to us: that which I fight against is the conceited silliness of certain persons.

"You satirical gentlemen will have the frankness, I hope, to confess with me that the different reasons pleaded by you in explanation of these problems are not so solid as they appear to be. Since you have discovered nothing, let us admit, between ourselves, that your explanations explain nothing.

"I do not doubt that, at the point in the discussion which we have actually reached, you would like to change rôles with me, and, stopping me here, constitute yourselves in turn my questioners.

"But I hasten to anticipate your proposal. As for me, gentlemen, I am not sufficiently well informed to explain these mysteries. I pass my life in a retired garden belonging to one of the nine Muses, and my attachment to this fair creature is such that I have scarcely ever quitted the approaches to her temple. It is only at intervals, in moments of relaxation or curiosity, that I have allowed my eyes to wander, from time to time, over the landscapes which surround it. Therefore ask me nothing. I am making a sincere confession. I know nothing of the cause of these phenomena.

"You see how modest I am. All I wanted in undertaking this examination was to have the opportunity of saying this:

"You know nothing about it.

"Neither do I.

"If you acknowledge this, we can shake hands. And, if you are tractable, I will tell you a little secret.

"In the month of June, 1776 (few among us remember it), a young man twenty-five years old, named Jouffroy, was making a trial trip on the river Doubs of a new steamboat forty feet in length and six feet in breadth. For two years he had been calling the attention of scientific authorities to his invention; for two years he had been stoutly asserting that there is a powerful latent energy in steam,—at that time a neglected asset. All ears were deaf to his words. His only reward was to be completely isolated and neglected. When he passed through the streets of Baume-les-Dames, his appearance was the signal for jests innumerable. He was dubbed 'Jouffroy, the Steam Man' (*'Jouffroy-la-Pompe'*). Ten years later, having built a pyroscaphe [literally, fireboat] which had ascended the Saône from Lyons to the island of Barbe, he presented a petition to Calonne, the comptroller-general of finance, and to the Academy of Sciences. They would not look at his invention!

"On August 9, 1803, Fulton went up the Seine in a new steamboat at the rate of about four miles an hour. The members of the Academy of Sciences as well as government officials were present on the occasion. The next day they had forgotten all about it, and Fulton went to make the fortunes of Americans.

"In 1791 an Italian at Bologna, named Galvani, having hung on the iron railing outside his window some skinned frogs which had been used in making a bouillon for his wife, noted that they moved automatically, although they had been killed since the evening before. The thing was incredible, so everybody to whom he told it opposed his statement. Men of sense would have thought it beneath their dignity to take the trouble to verify the story, so convinced were they of its impossibility. But Galvani had noted that

the maximum of effect was attained when he joined the lumbar nerves and the ends of the feet of a frog by a metallic arc of tin and copper. The frog's muscles then jerked convulsively. He believed it was due to a nervous fluid, and so lost the fruit of his investigations. It was reserved for Volta to discover electricity.

"And to-day the globe is threaded with a network of trains drawn by flame-breathing dragons. Distances have disappeared, annihilated by improvements in the locomotive. The genius of man has contracted the dimensions of the earth; the longest voyages are but excursions over definite lines (the curved paths of the 'ocean lanes'); the most gigantic tasks are accomplished by the tireless and powerful hand of this unknown force. A telegraphic despatch flies in the twinkling of an eye from one continent to another; a man can talk with a citizen of London or St. Petersburg without getting out of his arm-chair. And these wonders attract no special notice. We little think through what struggles, bitter disappointments and persecutions they came into being! We forget that the impossible of yesterday is the accomplished fact of to-day. So it comes to pass that we still find men who come to us saying: 'Halt there, you little fellows! We don't understand you, therefore you don't know what you're talking about.'

"Very well, gentlemen. However narrow may be your opinions, there is no reason for thinking that your myopia is to spread over the world. You are hereby informed that, in spite of you and in spite of your obscurantism and obstruction tactics, the car of human progress will roll on and continue its triumphal march and conquest of new forces and powers. As in the case of Galvani's frog, the laughable occurrences that you refuse to believe reveal the existence of new unknown forces. There is no effect without a cause. Man is the least known of all beings. We have learned

how to measure the sun, cross the deeps of space, analyze the light of the stars, and yet have not dropped a plummet into our own souls. Man is dual,— *homo duplex;* and this double nature remains a mystery to him. We think: what is thought? No one can say. We walk: what is that organic act? No one knows. My will is an immaterial force; all the faculties of my soul are immaterial. Nevertheless, if I *will* to move my arm, my will moves matter. How does it act? What is the mediator between mind and muscle? As yet no one can say. Tell me how the optic nerve transmits to the thinking brain the perception of outward objects. Tell me how thought is born, where it resides, what is the nature of cerebral action. Tell me — but no, gentlemen: I could question you for ten years on a stretch, and the most eminent of you could not answer the least of my interrogatories.

"We have here, as in the preceding cases, the unknown element in a problem. I am far from claiming that the force that comes into play in these phenomena can one day be financially exploited, as in the case of electricity and steam. Such an idea has not the slightest interest for me. But, though differing essentially from these forces, the mysterious psychic force none the less exists.

"In the course of the long and laborious studies to which I have consecrated many a night, as a relief or by-play in more important work, I have always observed in these phenomena the action of a force the properties of which are to us unknown. Sometimes it has seemed to me analogous to that which puts to sleep the magnetized subject under the will of the hypnotizer (a reality this, also slighted even by men of science). Again, in other circumstances, it has seemed to me analogous to the curious freaks of the lightning. Still, I believe I can affirm it to be a force distinct

from all that we know, and which more than any other resembles intelligence.

"A certain savant with whom I am acquainted, M. Frémy, of the Institute, has recently presented to the Academy of Science, apropos of spontaneous generation, substances which he has called *semi-organic*. I believe I am not perpetrating a neologism bolder than this when I say that the force of which I am speaking has seemed to me to belong to the *semi-intellectual* plane.

"Some years ago I gave these forces the name *psychic*. That name can be justified.

"But words are nothing. They often resemble cuirasses, hiding the real impression that ideas should produce in us. That is the reason why it is perhaps better not to name a thing that we are not yet able to define. If we did, we should find ourselves so shackled afterwards as not to have perfect freedom in our conclusions. It has often been seen in history that a premature hypothesis has arrested the progress of science, says Grove: 'When natural phenomena are observed for the first time, a tendency immediately arises to relate them to something already known. The new phenomenon may be quite remote from the ideas with which one would compare it. It may belong to a different order of analogies. But this distinction cannot be perceived, since the necessary data or co-ordinates are lacking.' Now the theory originally announced is soon accepted by the public; and when it happens that subsequent facts, different from the preceding, fail to fit the mould, it is difficult to enlarge this without breaking it, and people often prefer to abandon a theory now proved erroneous, and silently ignore the intractable facts. As to the special phenomena in question in this little volume, I find them implicitly embodied in three words uttered nearly twenty centuries ago,— MENS AGITAT MOLEM (mind acting on matter gives it life and mo-

tion); and I leave the phenomena embedded in these words, like fire in the flint. I will not strike with the steel, for the spark is still dangerous. '*Periculosum est credere et non credere*' ('It is dangerous to believe and not to believe'), says the ancient fabulist Phædrus. To deny facts *a priori* is mere conceit and idiocy. To accept them without investigation is weakness and folly. Why seek to press on so eagerly and prematurely into regions to which our poor powers cannot yet attain? The way is full of snares and bottomless pits. The phenomena we are treating in these pages do not perhaps throw new light upon the solution of the great problem of immortality, but they invite us to remember that there are in man elements to study, to determine, to analyze,— elements still unexplained, and which belong to the psychic realm.

"There has been much talk about Spiritualism in connection with these phenomena. Some of its defenders have thought to strengthen it by supporting it on so weak a basis as that. The scoffers have thought they could positively ruin the creed of the psychics, and, hurling it from its base, bury it under a fallen wardrobe (*l'éboulement d'une armoire*).* Now the first-named have rather compromised than assisted the cause: the others have not overturned it after all. Even if it should be proved that Spiritualism consists only of tricks of legerdemain, the belief in the existence of souls separate from the body would not be affected in the slightest degree. Besides, the deceptions of mediums do not prove that they are always tricky. They only put us on our guard, and induce us to keep a stern watch upon them.

"As to the psychological question of the soul and the an-

* This seems to be a reference to the wardrobe used by the early Spiritualists as a cabinet in their demonstrations in public halls.—*Trans.*

alysis of spiritual forces, we are just where chemistry was at the time of Albert the Great: we don't know.

"Can we not then keep the golden mean between negation, which denies all, and credulity, which accepts all? Is it rational to deny everything that we cannot understand, or, on the contrary, to believe all the follies that morbid imaginations give birth to, one after another? Can we not possess at once the humility which becomes the weak and the dignity which becomes the strong?

"I end this plea, as I began it, by declaring that it is not for the sake of the brothers Davenport, nor of any sect, nor of any group, nor, in short, of any person whatever, that I have entered the lists of controversy, but solely for the sake of facts the reality of which I ascertained several years ago, without having discovered their cause. However, I have no reason to fear that those who do not know me will take a fancy to misrepresent my thought; and I think that those who are acquainted with me know that I am not accustomed to swing a censer in any one's honor. I repeat for the last time: I am not concerned with individuals. My mind seeks the truth, and recognizes it wherever it finds it. *'Gallus escam quærens margaritam reperit."* *

A certain number of my readers have been for some time kindly expressing a wish for a new edition of this early book. But strictly speaking I could not do this without considerably enlarging my original plan and composing an entirely new work. The daily routine of my astronomical labors has constantly hindered me from devoting myself to that task. The starry heaven is a vast and absorbing field of work, and it is difficult to turn aside (even for a relaxation in itself scientific) from the exacting claims of a science which goes on developing unceasingly at a most prodigious rate.

Still, the present work may be considered as, in a sense,

* The cock scratching for grain finds a pearl.

an enlarged edition of the earlier one. The foregoing citation of a little book written for the purpose of proving the existence of unknown forces in nature has seemed to me necessary here; useful in this new volume, brought out for the same purpose after more than forty years of study, since it may serve to show the continuity and consistent development of my thought on the subject.

MYSTERIOUS PSYCHIC FORCES

MYSTERIOUS PSYCHIC FORCES

CHAPTER I

ON CERTAIN UNKNOWN NATURAL FORCES

I purpose to show in this book what truth there is in the phenomena of table-turnings, table-movings, and table-rappings, in the communications received therefrom, in levitations that contradict the laws of gravity, in the moving of objects without contact, in unexplained noises, in the stories told of haunted houses,— all to be considered from the physical and mechanical point of view. Under all the just mentioned heads we can group material facts produced by causes still unknown to science, and it is with these physical phenomena that we shall specially occupy ourselves here; for the first point is to definitely prove, by sufficient observations, their real existence. Hypotheses, theories, doctrines, will come later.

In the country of Rabelais, of Montaigne, of Voltaire, we are inclined to smile at everything that relates to the marvellous, to tales of enchantment, the extravagances of occultism, the mysteries of magic. This arises from a reasonable prudence. But it does not go far enough. To deny and prejudge a phenomenon has never proved anything. The truth of almost every fact which constitutes the sum of the positive sciences of our day has been denied. What we ought to do is to admit no unverified statement, to apply to every subject of study, no matter what, the experimental method, without any preconceived idea whatever, either for or against.

We are dealing here with a great problem, which touches on that of the survival of human consciousness. We may study it, in spite of smiles.

When we consecrate our lives to an idea, useful, noble, exalted, we should not hesitate for a moment to sacrifice personalities; above all, our own self, our interest, our self-esteem, our natural vanity. This sacrifice is a criterion by which I have estimated a good many characters. How many men, how many women, put their miserable little personality above everything else!

If the forces of which we are to treat are real, they cannot but be natural forces. We ought to admit, as an absolute principle, that everything is in nature, even God himself, as I have shown in another work. Before any attempt at theory, the first thing to do is to scientifically establish the real existence of these forces.

Mediumistic experiences might form (and doubtless soon will form) a chapter in physics. Only it is a kind of transcendental physics which touches on life and thought, and the forces in play are pre-eminently living forces, psychic forces.

I shall relate in the following chapter the experiments I made between the years 1861 and 1865, previous to the penning of the protest, reprinted in the long citation above given (in the Introduction). But, since in certain respects they are summed up in those I have just had, in 1906, I will begin by describing the latter in this first chapter.

In fact, I have recently renewed these investigations with a celebrated medium,— Mme. Eusapia Paladino, of Naples, who has been several times in Paris; namely, in 1898, 1905, and, very recently, in 1906. The things I am going to speak of happened in the salon of my home in Paris,— the last ones in full light without any preparation, very simply, as if during after-dinner talks.

Let me add that this medium came to Paris during the first months of the year, 1906, at the invitation of the Psychological Institute, several members of which have been recently engaged in researches begun long ago. Among these savants I will mention the name of the lamented Pierre Curie, the eminent chemist, with whom I had a conversation a few days before his unfortunate and terrible death. My mediumistic experiences with Mme. Paladino formed for him a new chapter in the great book of nature, and he also was convinced that there exist hidden forces to the investigation of which it is not unscientific to consecrate one's self. His subtle and penetrating genius would perhaps have quickly determined the character of these forces.

Those who have given some little attention to these psychological studies are acquainted with the powers of Mme. Paladino. The published works of Count de Rochas, of Professor Richet, of Dr. Dariex, of M. G. de Fontenay, and notably the *Annales des sciences psychiques,* have pointed them out and described them in such detail that it would be superfluous to recur to them at this point. Farther on we shall find a place for discussing them.

Running underneath all the observations of the above-mentioned writers, one dominant idea can be read as if in palimpsest; namely, the imperious necessity the experimenters are constantly under of suspecting tricks in this medium (Mme. Paladino). But all mediums, men and women, have to be watched. During a period of more than forty years I believe that I have received at my home nearly all of them, men and women of divers nationalities and from every quarter of the globe. One may lay it down as a principle that all professional mediums cheat. But they do not always cheat; and they possess real, undeniable psychic powers.

Their case is nearly that of the hysterical folk under observation at the Salpêtrière or elsewhere. I have seen some

of them outwit with their profound craft not only Dr. Charcot, but especially Dr. Luys, and all the physicians who were making a study of their case. But, because hysteriacs deceive and simulate, it would be a gross error to conclude that hysteria does not exist. And, because mediums frequently descend to the most brazen-faced imposture, it would not be less absurd to conclude that mediumship has no existence. Disreputable somnambulists do not forbid the existence of magnetism, hypnotism, and genuine somnambulism.

This necessity of being constantly on our guard has discouraged more than one investigator, as the illustrious astronomer Schiaparelli, director of the Observatory of Milan, specially wrote me, in a letter which will appear farther on.

Still, we have got to endure this evil.

The words "fraud" (*supercherie*) and "trickery" (*tricherie*) have in this connection a sense a little different from their ordinary meaning. Sometimes the mediums deceive purposely, knowing well what they are doing, and enjoying the fun. But oftener they unconsciously deceive, impelled by the desire to produce the phenomena that people are expecting.

They help on the success of the experiment when that success is slow in its appearance. Mediums who deal with objective phenomena are gifted with the power of causing objects at a distance to move, of lifting tables, etc. But they usually appear to apply this power at the ends of their fingers, and the objects to be moved have to be within reach of their hands or feet, a very regrettable thing, and one which furnishes fine sport for the prejudiced sceptics. Sometimes the mediums act like the billiard player, who continues for an instant the gesture of hand and arm, holding his cue pointed at the rolling ivory ball, and leaning forward as if by his will he could push it to a carom. He knows very well that he has no further power over the fate of the ball, whic

his initial stroke alone impels; but he guides its course by his thought and his gesture.

It may not be superfluous to caution the reader that the word "medium" is employed in these pages without any preconceived idea, and not in the etymological sense in which it took its rise at the time of the first Spiritualistic theories, which affirmed that the man or the woman endowed with psychic powers is an *intermediary* between spirits and those who are experimenting. The person who has the power of causing objects to move contrary to the laws of gravity (even sometimes without touching them), of causing sounds to be heard at a distance and without any exertion of muscular force, and of bringing before the eyes various apparitions, has not necessarily, on that account, any bond of union with disembodied minds or souls. We shall keep this word "medium," however, now so long in use. We are concerned here only with facts. I hope to convince the reader that these things really exist, and are neither illusions nor farces, nor feats of prestidigitation. My object is to prove their reality with absolute certainty, to do for them what (in my volume *The Unknown and the Psychic Problems*) I have done for telepathy, the apparitions of the dying, premonitory dreams, and clairvoyance.

I shall begin, I repeat, with experiments which I have recently renewed; namely, during four séances on March 29, April 5, May 30, and June 7, of 1906.

1. Take the case of the levitation of a round table. I have so often seen a rather heavy table lifted to a height of eight, twelve, sixteen inches from the floor, and I have taken such undeniably authentic photographs of these; I have so often proved to myself that the suspension of this article of furniture by the imposition *upon it* of the hands of four or five persons produces the effect of a floating in a tub full of water or other elastic fluid, that, for me,

the levitation of objects is no more doubtful than that of a pair of scissors lifted by the aid of a magnet. But one evening when I was almost alone with Eusapia, March 29, 1906 (there were four of us altogether), being desirous of examining at leisure how the thing was done, I asked her to place her hands with mine upon the table, the other persons remaining at a distance. The table very soon rose to a height of fifteen or twenty inches *while we were both standing.* At the moment of the production of the phenomenon the medium placed one of her hands on one of mine, which she pressed energetically, our two other hands resting side by side. Moreover, on her part, as on mine, there was an act of will expressed in words of command addressed to "the spirit": "Come now! Lift the table! Take courage! Come! Try now!" etc.

We ascertained at once that there were two elements or constituents present. On the one hand, the experimenters address an invisible entity. On the other hand, the medium experiences a nervous and muscular fatigue, and her weight increases in proportion to that of the object lifted (but not in exact proportion).

We are obliged to act as if there really were a being present who is listening. This being appears to come into existence, and then become non-existent as soon as the experiment is ended. It seems to be created by the medium. Is it an auto-suggestion of hers or of the dynamic ensemble of the experimenters that creates a special force? Is it a doubling of her personality? Is it the condensation of a psychic *milieu* in the midst of which we live? If we seek to obtain proofs of actual and permanent individuality, and above all of the identity of a particular soul called up in our memory, we never obtain any satisfaction. There lies the mystery.

Conclusion: we have here an unknown force of the psychic class, a living force, the life of a moment only.

May it not be possible that, in exerting ourselves, we give rise to a detachment of forces which acts exteriorly to our body? But this is not the place, in these first pages, to make hypotheses.

The experiment of which I have just spoken was repeated three times running, *in the full light* of a gas chandelier, and under the same conditions of complete proof in each case. A round table weighing about fourteen pounds is lifted by this unknown force. A table of twenty-five or fifty pounds or more requires a greater number of persons. But they will get no result if one at least among them is not gifted with the mediumistic power.

And let me add, on the other hand, that there is in such an experiment so great an expenditure of nervous and muscular energy that such an extraordinary medium as Eusapia, for instance, can obtain scarcely any results six hours, twelve hours, even twenty-four hours, after a séance in which she has so lavishly expended her psychic energy.

I will add that quite often the table continues to rise even after the experimenters have ceased to touch it. This is *movement without contact.*

This phenomenon of levitation is, to me, absolutely proved, although we cannot explain it. It is like what would happen if one had his hands gloved with loadstone, and, placing them on a table of iron, should lift it from the ground. But the action is not so simple as that: it is a case of psychic activity exterior to ourselves, momentarily in operation.*

* In order that I may at once place before the eyes of my readers documentary evidence of these experiments, I reproduce here (Pl. I) a photograph taken at my apartments on the 12th of November in 1898. Any one can perceive by the horizontality of the arms, as well as by the distance between the feet of the table and the floor, that the elevation is from six to eight inches. The precise distance is marked on the figure itself,— a measurement taken the next day by propping up the table, with the aid of books, in the same position as it was.

Now how are these levitations and movements produced?

How is it that a stick of sealing-wax or a lamp-chimney, when rubbed, attracts bits of paper or elder pith?

How is it that a particle of iron grips so firmly to the loadstone when brought near it?

How is it that electricity accumulates in the vapor of water, in the molecules of a cloud, until it gives rise to the thunder, the thunderbolt, the lightning flash, and all their formidable results?

How is it that the thunderbolt strips the clothes from a man or a woman with its characteristic nonchalance?

And (to take a simple instance), without departing from our common and normal condition of life, how is it that we raise our arm?

2. Take now a specimen of another group of cases. The medium places one of her hands upon that of some person, and with the other beats the air, with one, two, three, or four strokes or raps. The raps are heard *in* the table, and you feel the vibrations at the same time that you hear them,— sharp blows which make you think of electric shocks. It is superfluous to state that the feet of the medium do not touch those of the table, but are kept at a distance from them.

The medium next places her hands with ours upon the table, and the taps heard in the table are stronger than in the preceding case.

These taps audible in the table, this "typtology" well

The medium has her two feet wholly under my right foot, while at the same time her knees are under my right hand. Her hands are upon the table grasped by my left hand and by that of the other critical observer or "control" (*contrôleur*), who has just placed a cushion before her to shield her very sensitive eyes from the flash of the magnesium light, and thus save her from a disagreeable nervous attack.

These photographs, taken rapidly by magnesium light, are not perfect, but they are records.

PLATE I. COMPLETE LEVITATION OF A TABLE IN PROFESSOR FLAMMARION'S SALON THROUGH MEDIUMSHIP OF EUSAPIA PALADINO.

known to Spiritualists, have been frequently attributed to some kind of trickery or another, to a cracking muscle or to various actions of the medium. After the comparative study I have made of these special occurrences I believe I am right in affirming that this fact also is not less certain than the first. Rappings, as is well known, are obtained in all kinds of rhythms, and responses to all questions are obtained through simple conventions, by which it is agreed, for instance, that three taps shall mean "yes" and two mean "no," and that, while the letters of the alphabet are being read, words can be dictated by taps made as each letter is named.

3. During our experiments, while we four persons are seated around a table asking for a communication which does not arrive, an arm-chair, placed about twenty-four inches from the medium's foot (upon which I have placed my foot to make sure that she cannot use hers),— an arm-chair, I say, begins to move, and comes sliding up to us. I push it back; it returns. It is a stuffed affair (*pouf*), very heavy, but easily capable of gliding over the floor. This thing happened on the 29th of last March, and again on April 5th.

It could have been done by drawing the chair with a string or by the medium putting her foot sufficiently far out. But it happened over and over again (five or six times), automatically moving, and that so violently that the chair jumped about the floor in a topsy-turvy fashion and ended by falling bottom side up without anybody having touched it.

4. Here is a fourth case re-observed this year, after having been several times verified by me, notably in 1898.

Curtains near the medium, but which it is impossible for her to touch, either with the hand or the foot, swell out their whole length, as if inflated by a gusty wind. I have several

times seen them envelop the heads of the spectators as if with cowls of Capuchin monks.

5. Here is a fifth instance, authenticated by me several times, and always with the same care.

While I am holding one hand of Eusapia in mine, and one of my astronomical friends, tutor at the Ecole Polytechnique, is holding the other, we are touched, first one and then the other, upon the side and on the shoulders, as if by an invisible hand.

The medium usually tries to get together her two hands, held separately by each of us, and by a skilful substitution to make us believe we hold both when she has succeeded in disengaging one. This fraud being well known by us, we act the part of forewarned spectators, and are positive that we have each succeeded in holding her hands apart. The touchings in this experiment seem to proceed from an invisible entity and are rather disagreeable. Those which take place in the immediate vicinity of the medium *could* be due to fraud; but to some of them this explanation is inapplicable.

This is the place to remark that, unfortunately, the extraordinary character of the phenomena is in direct ratio with the absence of light, and we are continually asked by the medium to turn down the gas, almost to the vanishing point: "*Meno luce! meno luce!*" ("Less light, less light"). This, of course, is advantageous to all kinds of fraud. But it is a condition no more obligatory than the others. There is in it no implication of a threat.

We can get a large number of mediumistic phenomena with a light strong enough for us to distinguish things with certainty. Still, it is a fact that light is unfavorable to the production of phenomena.

This is annoying. Yet we have no right to impose the opposite condition. We have no right to demand of nature

conditions which happen to suit us. It would be just as reasonable to try to get a photographic negative without a dark room, or to draw electricity from a rotating machine in the midst of an atmosphere saturated with moisture. Light is a natural agent capable of producing certain effects and of opposing the production of others.

This aphorism calls to my mind an anecdote in the life of Daguerre, related in the first edition of this book.

One evening this illustrious natural philosopher meets an elegant and fashionable woman in the neighborhood of the Opera House, of which he was at that time the decorator. Enthusiastic over his progress in natural philosophy, he happens to speak of his photogenic studies. He tells her of a marvellous discovery by which the features of the face can be fixed upon a plate of silver. The lady, who is a person of plain common sense, courteously laughs in his face. The savant goes on with his story, without being disconcerted. He even adds that it is possible for the phenomenon to take place instantaneously when the processes become perfected. But he has his pains for his trouble. His charming companion is not credulous enough to accept such an extravagance. Paint without colors and without a brush! design without pen or crayon! as if a portrait could get painted all by itself, etc. But the inventor is not discouraged, and, to convince her, offers to make her portrait by this process. The lady is unwilling to be thought a dupe and refuses. But the skilful artist pleads his cause so well that he overcomes her objections. The blond daughter of Eve consents to pose before the object-glass. But she makes one condition,—only one.

Her beauty is at its best in the evening, and she feels a little faded in the garish light of day.

"If you could take me in the evening —"

"But, madame, it is impossible —"

"Why? You say that your invention reproduces the face, feature by feature. I prefer my features of the evening over those of the morning."

"Madame, it is the light itself which pencils the image, and without it I can do nothing."

"We will light a chandelier, a lamp, do anything to please you."

"No, madame, the light of day is imperative."

"Will you please tell me why?"

"Because the light of the sun exhibits an intense activity, sufficient to decompose the iodide of silver. So far, I have not been able to take a photograph except in full sunlight."

Both remained obstinate, the lady maintaining that what could be done at ten o'clock in the morning could also easily be done at ten o'clock in the evening. The inventor affirmed the contrary.

So, then, all you have to do, gentlemen, is to forbid the light to blacken iodine, or order it to blacken lime, and condemn the photographer to develop his negative in full light. Ask Electricity why it will pass instantaneously from one end to the other of an iron wire a thousand miles long and why it refuses to traverse a thread of glass half an inch long. Beg the night-blooming flowers to expand in the day, or those that only bloom in the light not to close at dusk. Give me the explanation of the respiration of plants, diurnal and nocturnal, and of the production of chlorophyll and how plants develop a green color in the light; why they breathe in oxygen and exhale carbonic acid gas during the night, and reverse the process during the day. Change the equivalents of simple substances in chemistry, and order combinations to be produced. Forbid azotic acid to boil at the freezing temperature, and command water to boil at zero. You have only to ask these accommodations and nature will obey you, gentlemen, depend upon it.

A good many phenomena of nature only occur in obscurity. The germs of plants, animals, man, in forming a new being, work their miracle only in the dark.

Here, in a flask, is a mixture of hydrogen and chlorine in equal volumes. If you wish to preserve the mixture, you must keep the flask in the dark, whether you want to or not. Such is the law. As long as it remains in the dark, it will retain its properties. But suppose you take a schoolboy notion to expose the thing to the action of light. Instantly a violent explosion is heard; the hydrogen and the chlorine disappear, and you find in the flask a new substance, — chloridic acid. There is no use in your finding fault: darkness respects the two substances, while light explodes them.

If we should hear a malignant sceptic of some clique or other say, "I will only believe in jack-o'-lanterns when I see them in the light of day," what should we think of his sanity? About what we should think if he should add that the stars are not certainties, since they are only seen at night.

In all the observations and experiments of physics there are conditions to be observed. In those of which we are speaking a too strong light seems to imperil the success of the experiment. But it goes without saying that precautions against deception ought to increase in direct ratio with the decrease of visibility and other means of verification.

Let us return to our experiments.

6. Taps are heard in the table, or it moves, rises, falls back, raps with its leg. A kind of interior movement is produced in the wood, violent enough, sometimes, to break it. The round table I made use of (with others) in my home was dislocated and repaired more than once, and it was by no means the pressure of the hands upon it that could have caused the dislocations. No, there is something more

than that in it: there is in the actions of the table the intervention of mind, of which I have already spoken.

The table is questioned, by means of the conventional signs described a few pages back, and it responds. Phrases are rapped out, usually banal and without any literary, scientific, or philosophical value. But, at any rate, words are rapped out, phrases are dictated. These phrases do not come of their own accord, nor is it the medium who taps them — consciously — either with her foot or her hand, or by the aid of a snapping muscle, for we obtain them in séances held without professional mediums and at scientific reunions where the existence of trickery would be a thing of the greatest absurdity. The mind of the medium and that of the experimenters most assuredly have something to do with the mystery. The replies obtained generally tally the intellectual status of the company, as if the intellectual faculties of the persons present were exterior to their brains and were acting in the table wholly unknown to the experimenters themselves. How can this thing be? How can we compose and dictate phrases without knowing it. Sometimes the ideas broached seem to come from a personality unknown to the company, and the hypothesis of spirits quite naturally presents itself. A word is begun; some one thinks he can divine its ending; to save time, he writes it down; the table parries, is agitated, impatient. It is the wrong word; another was being dictated. There is here, then, a psychic element which we are obliged to recognize, whatever its nature may be when analyzed.

The success of experiments does not always depend on the will of the medium. Of course that is the chief element in it; but certain conditions independent of her are necessary. The psychical atmosphere created by the persons present has an influence that cannot be neglected. So the state of health of the medium is not without its influence. If he is fatigued,

although he may have the best will in the world, the value of the results will be affected. I had a new proof of this thing, so often observed, at my house, with Eusapia Paladino, on May 30, 1906. She had for more than a month been suffering from a rather painful affection of the eyes; and furthermore her legs were considerably swollen. We were seven, of whom two lookers-on were sceptics. The results were almost nil; namely, the lifting, during scarcely two seconds of time, of a round table weighing about four pounds; the tipping up of one side of a four-legged table; and a few rappings. Still, the medium seemed animated by a real wish to obtain some result. She confessed to me, however, that what had chiefly paralyzed her faculties was the sceptical and sarcastic spirit of one of the two incredulous persons. I knew of the absolute scepticism of this man. It had not been manifested in any way; but Eusapia had at once divined it.

The state of mind of the by-standers, sympathetic or antipathetic, has an influence upon the production of the phenomena. This is an incontestable matter of observation. I am not speaking here merely of a tricky medium rendered powerless to act by a too close critical inspection, but also of a hostile force which may more or less neutralize the sincerest volition. Is it not the same, moreover, in assemblies, large or small, in conferences, in salons, etc.? Do we not often see persons of baleful and antipathetic spirit defeat at their very beginning the accomplishment of the noblest purposes.

Here are the results of another sitting of the same medium held a few days afterwards.

On the 7th of June, 1906, I had been informed by my friend Dr. Ostwalt, the skilled oculist, who was at that time treating Eusapia, that she was to be at his house that evening and that perhaps I would be able to try a new experi-

ment. I accepted with all the more readiness because the mother-in-law of the doctor, Mme. Werner, to whom I had been attached by a friendship of more than thirty years, had been dead a year, and had many a time promised me, in the most formal manner, to appear after her death for the purpose of giving completeness to my psychical researches by a manifestation, if the thing was possible. We had so often conversed on these subjects, and she was so deeply interested in them, that she had renewed her promise very emphatically a few days before her death. And at the same time she made a similar promise to her daughter and to her son-in-law.

Eusapia, also, on her part, grateful for the care she had received at the doctor's hands and for the curing of her eye, wished to be agreeable to him in any way she could.

The conditions, then, were in all respects excellent. I agreed with the doctor that we had before us four possible hypotheses, and that we should seek to fix on the most probable one.

a. What would take place might be due to fraud, conscious or unconscious.

b. The phenomena might be produced by a physical force emanating from the medium.

c. Or by one or several invisible entities making use of this force.

d. Or by Mme. Werner herself.

We had on that evening some movements of the table and a complete lifting of the four feet to a height of about eight inches. Six of us sat around the table,— Eusapia, Madame and Monsieur Ostwalt, their son Pierre, sixteen years old, my wife and myself. Our hands placed above the table scarcely touched it, and were almost wholly detached at the moment it rose from the floor. No fraud possible. Full light.

The séance then continued in the dark. The two portières of a great double-folding door, against which the medium was seated, her back to the door, were blown about for nearly an hour, sometimes so violently as to form something like a monk's hood on the head of the doctor and that of his wife.

This great door was several times shaken violently, and tremendous blows were struck upon it.

We tried to obtain words by means of the alphabet, but without success. (I will remark in this connection that Eusapia knows neither how to read nor to write.)

Pierre Ostwalt was able to write a word with the pencil. It seemed as if an invisible force was guiding his hand. The word he pencilled down was the first name of Mme. Werner, *well known to him.*

In spite of all our efforts, we were unable to obtain a single proof of identity. Yet it would have been very easy for Mme. Werner to find one, as she had so solemnly promised us to do.

In spite of the announcement by raps that an apparition would appear which we would be permitted to see, we were only able to perceive a dim white form, devoid of precise outline, even when we manipulated the light so as to get almost complete darkness. From this new sitting the following conclusions are deduced:

a. Fraud cannot explain the phenomena, especially the levitation of the table, the violent blows and shakings given to the door, and the projection of the curtain into the room.

b. These phenomena are certainly produced by a force emanating from the medium, for they all occur in her immediate neighborhood.

c. This force is intelligent. But it is possible that this intelligence which obeys our requests is only that of the medium.

d. Nothing proves that the spirit evoked had any influence.

These propositions, however, will be examined and developed one by one in the pages that follow.

All the experiments described in this first chapter reveal to us unknown forces in operation. It will be the same in the chapters that follow.

These phenomena are so unexplained, so inexplicable, so incredible, that the simplest plan is to deny them, to attribute them all to fraud or to hallucination, and to believe that all the participators are sand-blind.

Unfortunately for our opponents, this hypothesis is inadmissible.

Let me say here that there are very few men — and above all, women — whose spirit is completely *free;* that is, in a condition capable of accepting, without any preconceived idea, new or unexplained facts. In general, people are disposed to admit only those facts or things for which they are prepared by the ideas they have received, cherished, and maintained. Perhaps there is not one human being in a hundred who is capable of making a mental record of a new impression, simply, freely, exactly, with the accuracy of a photographic camera. Absolute independence of judgment is a rare thing among men.

A single fact accurately observed, even if it should contradict all science, is worth more than all the hypotheses.

But only the independent minds, free from the classic leading-strings which tie the dogmatists to their chairs, dare to study extra-scientific facts or consider them possible.

I am acquainted with erudite men of genius, members of the Academy of Sciences, professors at the university, masters in our great schools, who reason in the following way: "Such and such phenomena are impossible because

they are in contradiction with the actual state of science. We should only admit what we can explain."

They call that scientific reasoning!

Examples.— Frauenhofer discovers that the solar spectrum is crossed by dark lines. These dark lines could not be explained in his time. Therefore we ought not to believe in them.

Newton discovers that the stars move *as if* they were governed by an attractive force. This attraction could not be explained in his time. Nor is it explained to-day. Newton himself takes the pains to declare that he does not wish to explain it by an hypothesis. "*Hypotheses non fingo*" ("I do not make hypotheses"). So, after the reasoning of our pseudo-logicians, we ought not to admit universal gravitation. Oxygen combined with hydrogen forms water. How? We don't know. Hence we ought not to admit the fact.

Stones sometimes fall from the sky. The Academy of Sciences of the eighteenth century, not being able to divine where they came from, simply denied the fact, which had been observed for thousands of years. They denied also that fish and toads can fall from the clouds, because it had not then been observed that waterspouts draw them up by suction and transport them from one place to another. A medium places his hand upon a table and seems actually to transmit to it independent life. It is inexplicable, therefore it is false. Yet that is the predominant method of reasoning of a great number of scholars. They are only willing to admit what is known and explained. They declared that locomotives would not be able to move, or, if they did succeed, railways would introduce no change in social relations; that the transatlantic telegraph would never transmit a despatch; that vaccine would not render immune; and at one time they stoutly maintained (this was long ago) that the earth does

not revolve. It seems that they even condemned Galileo. *Everything* has been denied.

Apropos of facts somewhat similar to those we are here studying,— I mean the stigmata of Louise Lateau,— a very famous German scholar, Professor Virchow, closed his report to the Berlin Academy with this dilemma: *Fraud or Miracle.* This conclusion acquired a classic vogue. But it was an error, for it is now known that stigmata are due neither to fraud nor miracle.

Another rather common objection is presented by certain persons apparently scientific. Confounding experience with observation, they imagine that a natural phenomenon, in order to be real, ought to be able to be produced at will, as in a laboratory. After this manner of looking at things, an eclipse of the sun would not be a real thing, nor a stroke of lightning which sets fire to a house, nor an aërolite that falls from the sky. An earthquake, a volcanic eruption, are phenomena of observation, not of experiment. But they none the less exist, often to the great damage of the human race. Now, in the order of facts that we are studying here, we can almost never experiment, but only observe, and this reduces considerably the range of the field of study. And, even when we do experiment, the phenomena are not produced at will: certain elements, several of which we have not yet been able to get hold of, intervene to cross, modify, and thwart them, so that for the most part we can only play the rôle of observers. The difference is analogous to that which separates chemistry from astronomy. In chemistry we experiment: in astronomy we observe. But this does not hinder astronomy from being the most exact of the sciences.

Mediumistic phenomena that come directly under the observation, notably those I have described some pages back, have for me the stamp of absolute certainty and incontesta-

bility, and amply suffice to prove that unknown physical forces exist outside of the ordinary and established domain of natural philosophy. As a principle, moreover, this is an unimpeachable tenet.*

I could adduce still other instances, for example the following:

7. During séance experiments, phantoms often appear,—hands, arms, a head, a bust, an entire human figure. I was a witness of this thing, especially on July 27, 1897, at Montfort-l'Amaury (see Chapter III). M. de Fontenay having declared that he perceived an image or spirit over the table, between himself and me (we were sitting face to face, keeping watch over Eusapia, he holding one of her hands, and I the other), and I seeing nothing at all, I asked him to change places with me. And then I, too, perceived this spirit-shadow, the head of a bearded man, rather vaguely outlined, which was moving like a silhouette, advancing and retiring in front of a red lantern placed on a piece of furniture. I had not been able to see at first from where I sat, because the lantern was then behind me, and the spectral appearance was formed between M. de Fontenay and me. As this dark silhouette remained rather vague, I asked if I could not touch its beard. The medium replied, "Stretch out your hand." I then felt upon the back of my hand the brushing of a very soft beard.

This case did not have for me the same *absolute certainty* as the preceding. There are degrees in the feeling of security we have in observations. In astronomy, even, there are stars at the limit of visibility. And yet in the opinion of all the participators in the séance there was no trick. Besides, on another occasion, at my own home, I saw another figure, that of a young girl, as the reader will see in the third chapter.

* See *L'Inconnu*, pp. 20–29.

8. That same day, at Montfort, in the course of the conversation, some one recalled the circumstance that the "spirits" have sometimes impressed on paraffin or putty or clay the print of their head or of their hands,— a thing that seems in the last degree absurd. But we bought some putty at a glazier's and fixed up in a wooden box a perfectly soft cake. At the end of the séance there was the imprint of a head, of a face, in this putty. In this case, no more than in the other, am I *absolutely certain* there was no trickery. We will speak of it farther on.

Other manifestations will be noted in subsequent pages of this book. Stopping right here, for the present, at the special point of view of the proved existence of unknown forces, I will confine myself to the six preceding cases, regarding them as incontestable, in the judgment of any man of good faith or of any observer. If I have considered these particular cases so early in the work, it is in response to readers of my works who have been begging me for a long time to give my *personal* observations.

The simplest of these manifestations — that of raps, for example — is not a negligible asset. There is no doubt that it is one or another of the experimenters, or their dynamic resultant, that raps in the table without knowing how. So, even if it should be a psychic entity unknown to the mediums, it evidently makes use of them, of their physiological properties. Such a fact is not without scientific interest. The denials of scepticism prove nothing, unless it be that the deniers themselves have not observed the phenomena.

I have no other aim in this first chapter than to give a preliminary summary of the observed facts.

I do not desire to put forth in these first pages any explanatory hypothesis. My readers will themselves form an opinion from the narratives that follow, and the last chapter of the volume will be devoted to theories. Yet I believe it

will be useful to call attention at once to the fact that matter is not, in reality, what it appears to be to our vulgar senses,— to our sense of touch, to our vision,— but that it is identical with energy, and is only a manifestation of the movement of invisible and imponderable elements. The universe is a dynamism. Matter is only an appearance. It will be useful for the reader to bear this truth in mind, as it will help him to comprehend the studies we are about to make.

The mysterious forces we are here studying are themselves manifestations of the universal dynamism with which our five senses put us very imperfectly into relation.

These things belong to the psychical order as well as to the physical. They prove that we are living in the midst of an unexplored world, in which the psychic forces play a rôle as yet very imperfectly studied.

We have here a situation analogous to that in which Christopher Columbus found himself on the evening of the day when he perceived the first hints of land in the New World. We are pushing our prow through an absolutely unknown sea.

CHAPTER II

MY FIRST SEANCES IN THE ALLAN KARDEC GROUP AND WITH THE MEDIUMS OF THAT EPOCH

One day in the month of November, 1861, under the Galeries de l'Odéon,* I spied a book, the title of which struck me,— *Le Livre des Esprits* ("The Book of Spirits"), by Allan Kardec. I bought it and read it with avidity, several chapters seeming to me to agree with the scientific bases of the book I was then writing, *The Plurality of Inhabited Worlds.* I hunted up the author, who proposed that I should enter, as a free associated member, the Parisian Society for Spiritualistic Studies, which he had founded, and of which he was president. I accepted, and by chance have just found the green ticket signed by him on the fifteenth day of November, 1861. This is the date of my début in psychic studies. I was then nineteen, and for three years had been an astronomical pupil at the Paris Observatory. At this time I was putting the last touches to the book I just mentioned, the first edition of which was published some months afterwards by the printer-publisher of the Observatory.

The members came together every Friday evening in the assembly room of the society, in the little passageway of Sainte Anne, which was placed under the protection of Saint Louis. The president opened the séance by an "invocation to the good spirits." It was admitted, as a principle, that invisible spirits were present there and revealed

* Certain book-shops in Paris.— *Trans.*

themselves. After this invocation a certain number of persons, seated at a large table, were besought to abandon themselves to their inspiration and to write. They were called "writing mediums." Their dissertations were afterwards read before an attentive audience. There were no physical experiments of table-turning, or tables moving or speaking. The president, Allan Kardec, said he attached no value to such things. It seemed to him that the instructions communicated by the spirits ought to form the basis of a new doctrine, of a sort of religion.

At the same period, but several years earlier, my illustrious friend Victorien Sardou, who had been an occasional frequenter of the Observatory, had written, as a medium, some curious pages on the inhabitants of the planet Jupiter, and had produced picturesque and surprising designs, having as their aim to represent men and things as they appeared in this giant of worlds. He designed the dwellings of people in Jupiter. One of his sketches showed us the house of Mozart, others the houses of Zoroaster and of Bernard Palissy, who were country neighbors in one of the landscapes of this immense planet. The dwellings are ethereal and of an exquisite lightness. They may be judged of by the two figures here reproduced (Pl. II and III). The first represents a residence of Zoroaster, the second "the animals' quarters" belonging to the same. On the grounds are flowers, hammocks, swings, flying creatures, and, below, intelligent animals playing a special kind of ninepins where the fun is not to knock down the pins, but to put a cap on them, as in the cup and ball toy, etc.

These curious drawings prove indubitably that the signature "Bernard Palissy, of Jupiter," is apocryphal and that the hand of Victorien Sardou was not directed by a spirit from that planet. Nor was it the gifted author himself who planned these sketches and executed them in accord-

ance with a definite plan. They were made while he was in the condition of mediumship. A person is not magnetized, nor hypnotized, nor put to sleep in any way while in that state. But the brain is not ignorant of what is taking place: its cells perform their functions, and act (doubtless by a reflex movement) upon the motor nerves. At that time we all thought Jupiter was inhabited by a superior race of beings. The spiritistic communications were the reflex of the general ideas in the air. To-day, with our present knowledge of the planets, we should not imagine anything of the kind about that globe. And, moreover, spiritualistic séances have never taught us anything upon the subject of astronomy. Such results as were attained fail utterly to prove the intervention of spirits. Have the writing mediums given any more convincing proofs of it than these? This is what we shall have to examine in as impartial a way as we can.

I myself tried to see if I, too, could not write. By collecting and concentrating my powers and allowing my hand to be passive and unresistant, I soon found that, after it had traced certain dashes, and *o*'s, and sinuous lines more or less interlaced, very much as a four-year-old child learning to write might do, it finally did actually write words and phrases.

In these meetings of the Parisian Society for Spiritualistic Studies, I wrote for my part, some pages on astronomical subjects signed "Galileo." The communications remained in the possession of the society, and in 1867 Allan Kardec published them under the head *General Uranography,* in his work entitled *Genesis.* (I have preserved one of the first copies, with his dedication.) These astronomical pages taught me nothing. So I was not slow in concluding that they were only the echo of what I already knew, and that Galileo had no hand in them. When I wrote the pages,

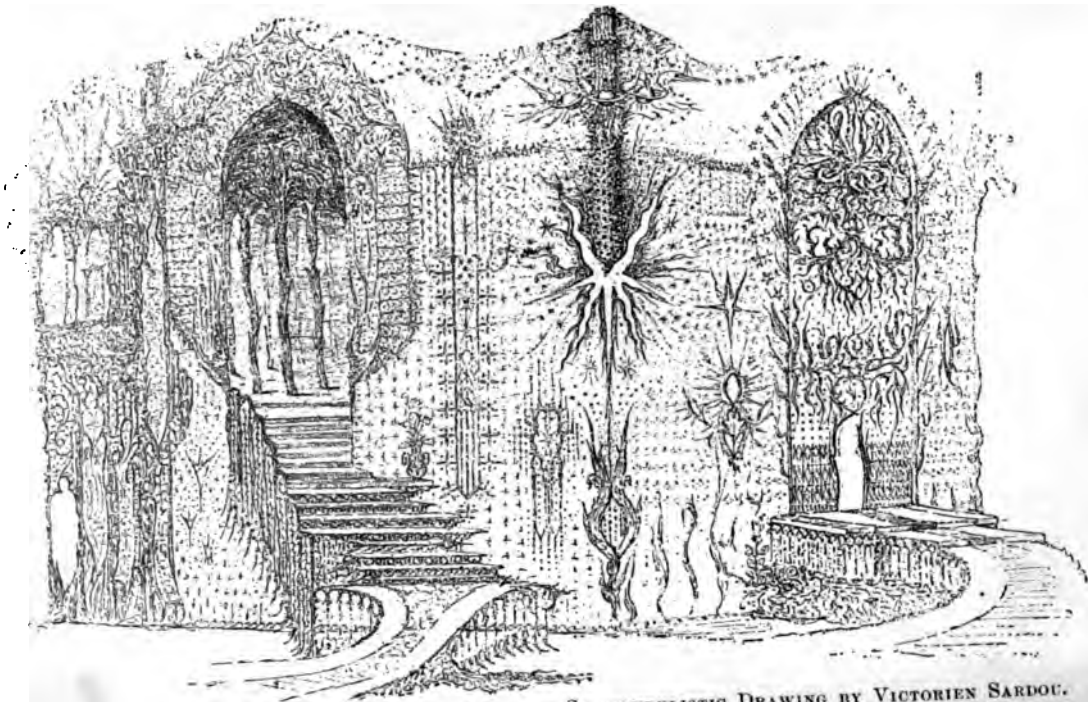

PLATE II. HOUSE OF ZOROASTRE OF JUPITER FROM SOMNAMBULISTIC DRAWING BY VICTORIEN SARDOU.

PLATE III. ANIMALS' QUARTERS. HOUSE OF ZOROASTER OF JUPITER FROM SOMNAMBULISTIC DRAWING BY VICTORIEN SARDOU.

I was in a kind of waking dream. Besides, my hand stopped writing when I began to think of other subjects.

I may quote here what I said on this subject in my work, *The Worlds of Space* (*Les Terres du Ciel*), in the edition of 1884, p. 181: —

The writing medium is not put to sleep, nor is he magnetized or hypnotized in any way. One is simply received into a circle of determinate ideas. The brain acts (by the mediation of the nervous system) a little differently from what it does in its normal state. The difference is not so great as one might suppose. The chief difference may be described as follows:

In the normal state we think of what we are going to write *before* the act of writing begins. There is a direct action of the will in causing the pen, the hand, and the fore-arm to move over the paper. In the abnormal state, on the other hand, we do not think before writing; we do not move the hand, but let it remain inert, passive, free; we place it upon the paper, taking care merely that it shall meet with the least possible resistance; we think of a word, a figure, a stroke of the pen, and the hand of its own volition begins to write. But the writing medium must *think* of what he is doing, not beforehand, but continuously; otherwise the hand stops. For example, try to write the word "ocean," not *voluntarily* (the ordinary way), but by simply taking a lead-pencil, and letting the hand rest lightly and freely upon the paper, while you think of your word and observe carefully whether the hand will write. Very good; it does begin to move over the paper, writing first an *o*, then a *c*, and the rest. At least that was my experience when I was studying the new problems of spiritualism and magnetism.

I have always thought that the circle of science is not a closed one, and that there are many things for us still to learn. In the mediumistic writing experiments it is very easy to deceive ourselves and to believe that the hand is under the influence of another mind than our own. The most probable conclusion regarding these experiences has been that the theory of the action of foreign spirits is not necessary

for the explanation of such phenomena. But this is not the place to enter into details upon a subject which, up to the present time, has been only slightly examined by scientific criticism, having more often been exploited by speculators than studied by scientists.

So I wrote in 1884; and I will indorse every word I then wrote, just as it stands.

In these first experiences with Spiritualists, of which I have just been speaking, I soon had the entrée of the chief Parisian circles devoted to these matters, and for a couple of years I even took the position of honorary secretary of one of them. A natural or necessary result of this was that I did not miss a single séance.

Three different methods were employed to receive communications: (1) writing with the hand; (2) the use of the planchette to which a lead-pencil was attached, and on which the hands were placed; and (3) table-rapping (or table-moving), operated by the alphabetic code, these raps or the movements of the table marking the desired letter as the alphabet was read aloud by one of those present.

The first of these methods was the only one employed at the Society for Spiritualistic Studies, of which Allan Kardec was president. It was the one which permitted the margin for the most doubt. In fact, at the end of two years of investigations of this kind, which I had varied as much as possible, and which I had entered upon without any preconceived idea for or against, and with the most ardent desire to arrive at the truth, I came to the positive conclusion that not only are the signatures of these papers not authentic, but that the intervention of another mind from the spirit world is not proved at all, the fact being that we ourselves are the more or less conscious authors of the communications by some cerebral process which yet remains to be investigated. The explanation is not so simple as it seems, and

there are certain reservations to be made in the general statement above.

When writing in the exalted and abnormal state of mind of the medium, we do not, as I have just said, form our phrases as in the normal condition; rather we wait for them to be produced. But all the same our own mind mingles in the process. The subject treated follows the lines of our own customary thoughts; the language employed is our native tongue, and, if we are uncertain about the spelling of certain words, errors will appear. Furthermore, so intimately are our own mental processes mingled with what is being written that, if we allow our thoughts to wander to another topic, the hand either stops writing or produces incoherent words and scrawls. This is the mental state of the writing medium,— at least that which I have observed in myself. It is a kind of auto-suggestion. I hasten to add, however, that this opinion only binds me to the extent of my own personal experiences. I am assured that there are mediums who act in an absolutely mechanical way, knowing nothing of the nature of what they are writing (see further on, pp. 58, 59), who treat subjects of which they are ignorant, and also even write in foreign languages. Such cases would be different from that of which I have just been speaking, and would indicate either a special cerebral state or great keenness of intellect, or a source of ideas exterior to the medium; *i.e.*, if it were once proved that our mind cannot divine that of which it is ignorant. But now the transference of thought from one brain to another, from one mind to another, is a fact proved by telepathy. We could conceive, then, that a medium might write under the influence of some one near by — or even at a distance. Several mediums have also composed (in successive séances) genuine romances, such as *The History of Joan of Arc, Written by Herself*, or certain voyages to other planets,— seeming to

indicate that there is a kind of doubling of the personality of the subject, a secondary personality. But there is no authentication of this. There is also a psychic *milieu,* of which I shall speak farther on. At present I must concern myself only with the subject of this chapter, and say with Newton, "*Hypotheses non fingo.*"

Allan Kardec died on the 30th of March, 1869, and, when the Society of Spiritualists came to ask me to deliver a funeral oration at his tomb, I took occasion, during this discourse, to direct the attention of the Spiritualists to the scientific character of investigations of this class and to the manifest danger of allowing ourselves to be drawn into mysticism.

I will reproduce at this point a few paragraphs taken from this address:

I wish I could impress upon you who hear me, as well as upon the millions of men throughout Europe and in the New World who are studying the still mysterious problem of spiritualism, what a deep scientific interest and what a philosophic future there is in the study of these phenomena, to which, as you know, many of our most eminent living scholars have given their time and attention. I wish I could present to your imagination and theirs the new and vast horizons we shall see opening up before us in proportion as we broaden our scientific knowledge of the forces of nature at work around us; and I would that I could show both you and them that such conquests of the mind are the most efficacious antidote to the leprosy of atheism which seems to be particularly the malignant degenerative element in this our epoch of transition.

What a salutary thing it would be could I but prove here, before this eloquent tomb, that the methodical examination of the phenomena erroneously called supernatural, far from calling back the spirit of superstition, and weakening the energy of the reason, serves, on the contrary, to banish the errors and illusions of ignorance, and assists the progress of

truth much more than do the irrational negations of those who will not take the trouble to look at the facts.

It is high time now that this complex subject of study should enter upon its scientific period. Enough stress has not been laid upon the physical side of the subject, which should be critically studied; for without rigid scientific experiment no proof is valid. This objective *a priori* method of investigation, to which we owe the glory of modern progress and the marvels of electricity and steam, should take up the still unexplained and mysterious phenomena with which we are acquainted, to dissect them, measure them, and to define them.

For, gentlemen, *spiritualism is not a religion, but a science,* a science of which we as yet scarcely know the *a, b, c.* The age of dogma is past. Nature includes the Universe; and God himself, who was in old times conceived of as a being of similar shape and form as man, cannot be considered by modern metaphysics as other than *Mind in Nature.*

The supernatural does not exist. The manifestations obtained by the agency of mediums, such as those of magnetism and somnambulism, belong to the order of nature and ought to be inexorably submitted to the test of experiment. There are no more miracles. We are witnessing the dawning of a new science. Who is there so bold as to predict whither the scientific study of the new psychology will lead, and what the results will be?

The limitations of human vision are such that the eye only sees things between narrow bounds, and beyond these limits, on this side and on that, it sees nothing. The body may be compared to a harp of two chords,— the optic nerve and the auditory nerve. One kind of vibrations excites the first and another kind the second. That is the whole story of human sensation, which is even inferior to that of many of the lower animals; certain insects, for example, in whom the nerves of vision and of hearing are more delicate than in man.

Now there are in nature, not two, but ten, a hundred, a thousand kinds of movement or vibration. We learn, then, from physical science, that we are living in the midst of a

world invisible to us, and that it is not impossible that there may be living upon the earth a class of beings, also invisible to us, endowed with a wholly different kind of senses, so that there is no way by which they can make themselves known to us, unless they can manifest themselves in acts and ways that can come within the range of our own order of sensations.

In the presence of such truths as these, which have as yet only been barely announced, how absurd and worthless seems mere blind denial! When we compare the little that we know and the narrow limits of our range of perception with the vast extent of the field of knowledge, we can scarcely refrain from the conclusion that we know nothing and that everything yet remains to be known. With what right do we pronounce the word "impossible" in the presence of facts which we prove to be genuine without yet being able to discover their causes?

It is by the scientific study of effects that we arrive at the determination of causes. In the class of investigations which we group under the general head "Spiritualism," FACTS EXIST. But no one understands the method of their production. Their existence, nevertheless, is just as true as the phenomena of electricity.

But, as for understanding them — why, gentlemen, nobody understands biology, physiology, psychology. What is the human body? What is the brain? What is the absolute action of the soul or mind? We do not know. And, neither do we know anything whatever of the essence of electricity or the essence of light. It is prudent, then, to observe with unbiased judgment all such matters as these, and to try to determine their causes, which are perhaps of different kinds and more numerous than has ever been supposed up to the present time.*

It will be seen that what I publicly uttered as I stood on the hillock above the grave into which Allan Kardec's coffin

* Oration delivered at the grave of Allan Kardec, by Camille Flammarion, Paris, Didier, 1869, pp. 4, 17, 22.

had just been lowered differs not at all from the purely scientific program of the present work.

I have just said that there were three methods employed in our spiritistic experiments. I have given my opinion of the first (writing mediums), basing it on my personal observations, and without desiring to weaken other proofs, if there are any. As to the second (planchette), I became familiar with it more especially by the séances of Mme. de Girardin, at the home of Victor Hugo in the Isle of Jersey. It works more independently than the first method; but it is still only a prolongation, as it were, of the hand and the brain. The third method — table-rapping, or typtology; I mean taps *in* the table — seems to me still more emphatically an extension of the hand and brain, and some forty-five years ago I often made use of this form of experiment.

Rappings made on the floor by one foot of the table, as letters are spelled out, have no special value. The least pressure can produce these see-saw movements. The chief experimenter himself makes the responses, sometimes without suspecting it.

Several persons group themselves about a table, place their hands upon it, and wait for something to happen. At the end of five, ten, fifteen, twenty minutes, the time depending on the psychic atmosphere * and the faculties of the experimenters, raps are heard in the table, or the sitters help in the movements of the table, which seems possessed. Why choose a table? Because it is the only article of furniture around which folks usually sit. Sometimes the table is lifted on one or more of its feet and is gently rocked to and fro. Sometimes it comes up as if glued to the hands placed on it, remaining suspended in the air two, three, five, ten, twenty

* The author means, of course, by this phrase (*milieu ambiant*), the totality of psychic force present, the psychological atmosphere, the total mind-energy radiated by the several more or less sensitive or mediumistic members of the company.— *Trans.*

seconds. Again, it is nailed to the floor with such force that it seems to have double or triple its usual weight. At other times, and usually on demand, it gives forth the sound of a saw, of a hatchet, of a lead-pencil writing, etc. We have here material results coming under direct observation, and they prove irrefragably the existence of an unknown force.

This force is a material force in the psychic class. If we confined our attention to blind senseless movements of one kind or another, in relation only with the volitions of the experimenters, and not capable of being explained by the mere imposition of their hands, we might see proof of the existence of a new unknown force, explicable as a transformation of nervous force, of organic electricity; and that would be much in itself. But the raps made in the table, or by the feet of it, are made in reply to questions asked. Since we know the table is only a piece of wood, when we ask it questions, we are really addressing some mental agent who hears and replies. It was in this class of phenomena that modern Spiritualism took its rise; namely, in the United States, in 1848, when the Fox sisters heard sounds in their chamber,—raps in the walls and in the furniture. Their father, after several months of vexatious investigation, finally had recourse to the traditional theory of ghosts, and, addressing his questions to the wall, demanded some kind of an explanation from the invisible *thing* therein. This thing responded by conventional taps to the questions asked, and declared that it was the spirit of the former proprietor once assassinated in this his very home. The spirit asked for prayers and the burial of its body. (From this time on the replies were so arranged that one rap in response to a question signified *yes*, two meant *no*, while three meant an emphatic *yes*.)

I hasten to remark at once that the tapped replies prove

nothing, and could have been made unconsciously by the Fox sisters themselves, whom we can not consider to have been playing a little comedy since the raps produced by them in the walls astounded and overwhelmed them more, indeed, than they did any one else. The hypothesis of jugglery and mystification, dear to certain critics, has not the least application to this case, although I admit that rappings and movements are often produced as practical jokes by waggish persons.

There is, of course, an unseen cause that originates these rappings. Is it within us or outside of us? Is it possible that we might be capable of doubling our personality in some way without knowing it, of acting by mental suggestion, of answering our own questions without suspecting it, of producing material results without being conscious of it? Or does there exist, around and about us, an intelligent medium or atmosphere, a kind of spiritual cosmos? Or, again, is it possible that we are surrounded by invisible non-human beings,— gnomes, spirits, and hobgoblins (there may be an unknown world about us)? Or, finally, is it possible that the spirits of the dead may survive, and wander to and fro, and hold communication with us? All these hypotheses present themselves to our minds, nor have we the scientific absolute right to reject any one of them.

The lifting of a table, the displacement of an object, may be attributed to an unknown force developed by our nervous system or otherwise. At least these movements do not prove the existence of a mind extraneous to that of the subject. But when some one is naming the letters of the alphabet or pointing them out on a sheet of pasteboard, and the table, either by raps in the wood or by levitations, puts together an intelligible sentence, we are forced to attribute this intelligent effect to an intelligent cause. This cause may be the medium himself; and the simplest way is, evidently, to

suppose that he himself raps out the letters. But experiments can be arranged in such a way that he cannot possibly do this, even unconsciously. Our first duty is, in reality, to make fraud impossible.

Those who have sufficiently studied the subject know that fraud does not explain what they have observed. To be sure, in fashionable Spiritualistic soirées people sometimes amuse themselves. Especially when the séances take place in the dark, and the alternation of the sexes is provided for so as to " reinforce the fluids," it is not altogether an unheard of thing for the gentlemen to profit by the temptation to temporarily forget the object of the meeting and break the established chain of hands in order to begin another on their own account. The ladies and the young girls like these changes in the program, and scarcely a complaint is heard. On the other hand, apart from fashionable soirées, to which everybody is invited for their amusement, the more serious reunions are frequently no safer; for the medium, who is, in one way or another, an interested person, is anxious to give the most he can — and something to boot.

Upon the leaf of an old note-book of mine which has just turned up, I classed Spiritualistic soirées in the following order, which is doubtless a slightly original one: —

1. Amorous caresses. (A similar reproach was made against the ancient Christian love-feasts or *agapes.*)

2. Charlatanry of mediums, abusing the credulity of the sitters.

3. *Some* serious inquirers.

At the time of which I was just now speaking (1861–63) I took part, as secretary, in experiments conducted regularly once a week, in the salon of a well-known medium,— Mlle. Huet, of Mont-Thabor Street. Mediumship was, in a way, her trade, and she had more than once been flagrantly detected in some most remarkable trickery. Accordingly, it

may be imagined that she would quite often give the raps herself by hitting the table-legs with her feet. But quite often we also obtained noises of sawing, of planing, of drum-beating, and torrents of rain, which it would have been impossible for her to imitate. Neither could the holding fast of the table to the floor be the work of fraud. As to the levitations of the table, I said awhile ago that, when one of us showed an inclination to resist with his hand the upward movement, he received an impression as if the table were floating on a fluid. Now it is hard to see how the medium could produce this result. Everything took place in broad daylight.

The communications received at the very many séances (several hundred) at which I have been present, both at that time and since, have always shown me that the results were in direct ratio with the cultivation of mind of the participants. I naturally asked a great many questions on astronomy. The replies never taught us anything new whatever; and, to be perfectly loyal to the truth, I must say that if, in these experiments, there are spirits, or beings independent of us in action, they know no more than we do about the other worlds.

A distinguished poet, P. F. Mathieu, was usually present at the reunions at the Mont-Thabor salon, and hence we sometimes obtained very pretty bits of verse, which I am sure he did not himself consciously produce; for, like all of us, he was there to learn. M. Joubert, vice-president of the civil tribunal of Carcassonne, has published a work, entitled *Various Fables and Poems, by a Spirit-rapper,* which bears on its face evidence that it is but the reflex of his customary thoughts. We had Christian philosophers with us at our reunions. Accordingly, the table dictated to us fine thoughts signed "Pascal," "Fénelon," "Vincent de Paul," and

"Sainte Thérèse. One spirit, who signed himself "Balthasar Grimod de la Reynière," dictated funny dissertations on the art of cooking. His specialty was to make the heavy table dance about in all kinds of contortions. Rabelais sometimes appeared, still loving the perfumes of savory viands as of old. Some of the spirits took pleasure in making *tours de force* in cryptology (secret writing). The following are specimens of these table-rapping communications. The first is from the vulgate version of the Bible, the Gospel of John iii. 8:

"Spiritus ubi vult spirat; et vocem ejus audis, sed nescis unde veniat aut quo vadat. Sic est omnis qui natus est ex spiritu." ("The wind bloweth where it listeth, and thou hearest the sound thereof, but canst not tell whence it cometh, and whither it goeth. So is every one that is born of the Spirit.")

"Dear little sister, I am here, and see that you are as good as ever. You are a medium. I will go to you with great happiness. Tell my mother her dear daughter loves her from this world.* LOUISA."

Some one asked one of the spirits if he could indicate by taps the words engraved inside of her ring. The response was:

"I love that one should love me as I love when I love."

A member of the company suspected that the table around which we were sitting might conceal a piece of mechanism for producing the raps. Accordingly, one of the sentences was dictated by raps made *in the air.*

Here is another series:

"Je suis ung ioyeux compaignon qui vous esmarveilleray avecques mes discours, je ne suis pas ung Esperict matéolo-

* This communication is given in English by the author.— *Trans.*

gien, je vestiray non liripipion et je diray: Beuvez l'eaue de la cave, poy plus, poy moins, serez content.

"ALCOFRIBAZ NAZIER."

("I am a jollie blade who will astonie you by my speech. I am not a vaine-babbling sperit. I will wear my graduate's hood and saie: Drinke ye water of ye cellar [wine],— no more, no less. Be content.

"FRANCOIS RABELAIS.")*

A rather lively discussion arose upon the subject of this unexpected visit,— and of the language, which some erudite persons present thought not to be pure Rabelaisian. Whereupon the table rapped:

"Bons enfants estes de vous esgousiller à ceste besterie. Mieux vault que beuviez froid que parliez chaud."

"RABELAIS."

("Ye're regular babies to bawle yourselves hoarse over this selynesse. It is bettaire to drinke cauld than to speak warme.)

"Liesse et Noël! Monsieur Satan est défun, et de mâle mort. Bien marrys sont les moynes, moynillons, bigotz et cagotz, carmes chaulx et déchaulx, papelards et frocards, mitrez et encapuchonnez: les vécy sans couraige, les Esperictz les ont destrosnez. Plus ne serez roustiz et eschaubouillez ez marmites monachales et roustissoires diaboliques; foin de ces billevesées papales et cléricquales. Dieu est bon, iuste et plein de miséricorde; il dict à ses petits enfancts: aimez-vous les ungs les autres et il pardoint à la repentance. Le grand dyable d'enfer est mort; vive Dieu!"

("Hurrah for a merry life! Maister Satan is dead, dead as a door-nail. The monks and the poor-devil friars are married,— bigots and fanatics, Carmelites shod and unshod,

* Alcofribaz Nazier is well known as Rabelais' anagram, formed from his own name. It was the signature under which he published his *Pantagruel.—Trans.*

the hypocrites and the cowled fellows, the mitres and the hoods. There they stand trembling in their tracks; the Spirits have dethroned them. Gone are the roastings and soup-makings in the Devil's Dutch ovens and in monastic kettles. A plague of these trashy tales of pope and priest! God is good, just, and full of pity. He says to his little children, 'Love one another'; and he pardons the repentant. The great devil in hell is dead. Hurrah for God!")

Here is still another series:

"Suov ruop erètsym nu sruojuot tnores emêm srueisulp; erdnerpmoc ed simrep erocne sap tse suov en li uq snoitseuq sed ridnoforppa ruop tirpse'l sap retnemruot suov en. Liesnoc nob nu zevius."

"Suov imrap engèr en edrocsid ed tirpse'l siamaj euq."

"Arevèlé suov ueid te serèrf sov imrap sreinred sel zeyos; évelé ares essiaba's iuq iulec 'éssiaba ares evèlé's iuq iulec."

These sentences must be read backwards, beginning at the end. Some one asked, "Why have you dictated thus?" The reply was:

"In order to give you new and unexpected proofs."

Read backwards, these Russian-like sentences are as follows:

"Celui qui s'élève sera abaissé, celui qui s'abaisse sera élevé; soyez les derniers parmi vos frères et Dieu vous élèvera."

"Que jamais l'esprit de discorde ne règne parmi vous."

"Suivez un bon conseil. Ne vous tourmenter pas l'esprit pour approfondir des questions qu'il ne vous est pas encore permis de comprendre; plusieurs même seront toujours un mystère pour vous."

("Whosoever exalteth himself shall be abased; and he that humbleth himself shall be exalted! Be the least among your brethren, and God will exalt you."

" Never let the spirit of discord reign among you."
" Follow good counsel. Do not torment your mind in attempting to fathom questions that it is not yet permitted you to comprehend: several of these will always be a mystery to you.")

Here is another of a different kind:

" Acmairsvnoouussevtoeussbaoinmsoentsfbiideenlteosuss.
" Sloeysepzruintissaeinndtieetuesnudrrvaosuessmaairlises."

I asked the meaning of this bizarre and portentous conglomeration of letters. The reply was:

" To conquer your doubts, read by skipping every other letter."

This arrangement using the skipped letters in their turn for the second and fourth lines gives the four following verses:

" Amis, nous vous aimons bien tous,
Car vous êtes bons et fidèles.
Soyez unis en Dieu: sur vous
L'Esprit-Saint étendra ses ailes."

(" Friends, we love you all,
For you are good and faithful.
Be united in God: over you
The Holy Spirit will spread his wings.")

This is innocent enough, surely and without any great poetic pretensions. But it must be admitted that this method of dictating is rather difficult.*

* A piece of typtological dictation of the same kind has been recently sent to me. Here it is:

IUTPTUOLOER
EIRFIEUEBN
SSOAGPESTI

Read successively, from top to bottom, one letter of each line, beginning on the left, and the sense will appear as follows: " Je suis trop fatigué pour les obtenir." (" I am too tired to obtain them.")

Some one spoke of human plans. The table dictated as follows: *

"When the shining sun scatters the stars, know ye, O mortal men, whether ye will see the evening of that day? And, when the sombre curtains of night are let fall from the sky, can you tell whether you will see the dawn of another morn?"

Another person asked, "What is faith?"

"Faith? 'Tis a blessed field that breeds a superb harvest, and every laborer may therein reap and garner to his heart's content, and carry home his sheaves."

Here are three prose dictations:

"Science is a forest where some are laying out roads, where many lose their way, and where all see the bounds of the forest recede as fast as they go forward."

"God does not illuminate the world with the lightning and the meteors. He guides peacefully in their courses the stars of the night, which fill the sky with their light. So the divine revelations succeed one another in order, reason, and harmony."

"Religion and Friendship are twin companions, who aid us to traverse the painful path of life."

I cannot forego the pleasure of inserting here, at the close of this chapter, a fable, dictated like the others by table-rappings, and sent to me by M. Joubert, vice-president of the civil tribunal of Carcassonne.† The sentiment of it may be queried by some; but is not the central principle applicable to all epochs and to all governments: Do not the "*arrivistes*" ‡ belong to all times?

* This and the next dictation are rhymed verse in the original French.— *Trans.*

† In rhymed verses in the original.— *Trans.*

‡ A word of recent origin, meaning ambitious or pretentious people who want "to arrive," the *would-be's*. The word forms the title of a recent French novel, *L'Arriviste*, and (translated) of an English one called *The Climber*.— *Trans.*

THE KING AND THE PEASANT

A king who had profaned the public liberties, who for twenty years had slaked his thirst in the blood of heretics; awaiting the quiet peace of the hangman in his declining days; decrepit, surfeited with adulterous amours; this king, this haughty monster of whom they had made a great man,— Louis the Fourteenth, in short, if I must name him,— was one day airing under the leafy arches of his vast gardens his Scarron, his infamy and his troubles. The noble band of court flunkeys came along. Each one at once lost at least six inches of his height. Pages, counts, marquises, dukes, princes, marshals, ministers, bowed low before insulting rivals, the creatures of the king. Grave magistrates made their deep reverences, each humbler than a suitor asking for audience. 'Twas pleasant to see how the ribbons, crosses and decorations on their embroidered coats went ever backwards. Always and always that ignoble bowing and scraping and cringing. I should like to wake up some morning an emperor, that I might sting with my whip the backbone of a flatterer. But see! alone, confronting the despot, yet without abasing his head, forging along with slow steps on his own way, modest, clad in coarse homespun garments, comes one who seems a peasant, perhaps a philosopher, and passes by the groups of insolent courtiers. "Oh," cries the king, in great surprise, "why do you alone confront me without bending the knee?" "Sire," said the unknown, "must I be frank? It is because I alone here expect nothing from you."

If we stop to think how these sentences and phrases and different bits of literature were produced, letter by letter, rap by rap, following the alphabet as it was read out, we shall appreciate the difficulty of the thing. The rappings are made either in the interior of the wood of the table (the vibrations of which are perceptible) or in some other piece of furniture, or even in the air. The table, as I have already said, is alive, pregnant with a kind of momentary vitality. Melodies of well-known airs, sounds of sawing and of the

workshop, and the report of fusillades can be drawn from it. Sometimes it becomes so light that it floats for a moment in the air, then so heavy that two men can scarcely lift it from the floor or budge it in any way. You must have a distinct picture in your mind of all these manifestations,— often puerile, no doubt, sometimes vulgar and grotesque, yet striking in their method of operation,— if you would accurately understand the phenomena, and realize that you are in the presence of an unknown element which jugglery and prestidigitation cannot explain.

Some folks can move their toes separately and crack the joints. If we should grant that the dictations, by combinations of letters (quoted above), were arranged in advance, learned by heart, and thus rapped, the matter would be simple enough. But this particular faculty is very rare, and it does not explain the noises *in* the table, the vibrations of which are felt by the hands. Again, one could fancy the medium tapping the table-legs with his foot, and thus constructing such sentences as he pleases. But it would require a wonderful memory in the medium to enable him to remember the precise arrangement of letters (for he has no memorandum before him), and, further, these curious dictations have been secured just the same in select companies where no one would cheat.

As to the theory that the spirits of eminent men are in communication with the experimenters the mere statement of the hypothesis shows its absurdity. Imagine a table-rapper calling up from the vasty deep the spirits of Paul or Saint Augustine, Archimedes or Newton, Pythagoras or Copernicus, Leonardo da Vinci or William Herschel, and receiving their dictations from the interior of a table!

We were speaking, a few pages back, of the séance drawings and descriptions of Jupiter made by Victorien Sardou. This is the proper place to insert a letter written by him

to M. Jules Claretie, and published by the latter in *Le Temps* at the date when that learned Academician was putting on the boards his drama *Spiritisme*. The letter is here appended:

. . . As to Spiritualism, I could better tell you verbally in three words what I think of it than I could write here in three pages. You are half right and half wrong. Pardon my freedom of speech. There are two things in Spiritualism,—(1) curious facts, inexplicable in the present state of our knowledge, and yet authenticated; and (2) the folks who explain them.

The facts are real. Those who explain them belong to three categories: there are, first, Spiritualists who are imbecile, ignorant, or mad, the chaps who call up Epaminondas and whom you justly make fun of, or who believe in the intervention of the devil; those, in short, who end in the lunatic asylum in Charenton.

Secundo, there are the charlatans, commencing with D.; impostors of all sorts, prophets, consulting mediums, such as A. K., and *tutti quanti.*

Finally, there are the scholars and scientists, who think they can explain everything by juggleries, hallucination, and unconscious movements, men like Chevreul and Faraday, who, while they are right about some of the phenomena described to them, and which really are jugglery or hallucination, are yet wrong about the whole series of original facts, which they will not take the trouble to look at, though they are highly important. These men are much to blame; for, by their plea-in-bar against earnest investigators (such as Gasparin, for example) and by their insufficient explanations, they have left Spiritualism to be exploited by charlatans of all kinds, and at the same time authorized serious amateurs to no longer waste their time over these studies.

Last of all, there are observers like myself (there are not many of us) who are incredulous by nature, but who have been obliged to admit, in the long run, that Spiritualism concerns itself with facts which defy any *present* scientific explication, but who do not despair of seeing them explained some day, and who therefore apply themselves to the study of the facts, and are trying to reduce them to some kind of

classification which may later prove to be law. We of this persuasion hold ourselves aloof from every coterie, from every clique, from all the prophets, and, satisfied with the convictions to which we have already attained, are content to see in Spiritualism the dawn of a truth, as yet very obscure, which will some day find its Ampère, as did the magnetic currents, and who grieve to see this truth choked out of existence by a dual foe,— excess of credulous ignorance which believes everything and excess of incredulous science which believes nothing.

We find in our conviction and our conscience the wherewithal to brave the petty martyrdom of ridicule inflicted upon us for the faith we profess, a faith exaggerated and caricatured by the mass of follies people never fail to attribute to us, nor do we deem that the myth in which they dress us up merits even the honor of a refutation.

Similarly, I have never had any desire to prove to anybody whatever that the influence of either Molière or Beaumarchais cannot be detected in my plays. It seems to me that that is more than evident.

Respecting the dwellings of the planet Jupiter, I must ask the good folks who suppose that I am convinced of the real existence of these things whether they are well persuaded that Gulliver believed in "Lilliput," * Campanella in the "City of the Sun," and Sir Thomas More in his "Utopia."

What is true, however, is that the design of which you speak [Pl. III.] was made in less than ten hours. As to its origin, I would not give a penny to know about that; but the fact of its production is another matter

V. Sardou.

Scarcely a year passes that mediums do not bring me drawings of plants and animals in the Moon, in Mars, Venus, Jupiter, or certain of the stars. These designs are more or less pretty, and more or less curious. But there is nothing in

* So in the original. Possibly M. Sardou was under the mistaken impression that Gulliver was a nom-de-plume for Dean Swift.— *Trans.*

them that leads us to admit their actual resemblance to real things in other worlds. On the contrary, everything proves that they are the products of imagination, essentially terrestrial, both in look and shape, not even tallying what we know to be the vital possibilities of those worlds. The designers of them are the dupes of illusion. These plants and animal are metamorphoses (sometimes elegantly conceived and drawn) of terrestrial organisms. Perhaps the most curious thing of all is that they have a family resemblance in the manner of their execution, and have stamped on them, in some way or other, the mediumistic hall-mark.

To return to my own experiences. When I took the rôle of writing-medium, I generally produced astronomical or philosophical dissertations signed "Galileo." I will quote but one of them as a sample. It is taken from my note-books of 1862.

SCIENCE.

The human intellect holds in its powerful grasp the infinite universe of space and time; it has penetrated the inaccessible domain of the Past, sounded the mystery of the unfathomable heavens, and believes that it has explained the riddle of the universe. The objective world has unrolled before the eyes of science its splendid panorama and its magnificent wealth of forms. The studies of man have led him to a knowledge of truth; he has explored the universe, discovered the inexorable reign of law, and the application of the forces that sustain all things. If it has not been permitted to him to see the First Cause face to face, at least he has attained a true mathematical idea of the series of secondary causes.

In this latest century, above all, the experimental *a priori* method, the only really scientific one, has been put into practice in the natural sciences, and by its aid man has freed himself from the prejudices of the old school of thought, one by one, and from subjective or speculative theories, and confined himself to a careful and intelligent study of the field of observation.

Yes, human science is firmly based and pregnant with possibility, worthy of our homage for its difficult and long-proved past, worthy of our sympathy for its future, big with the promise of useful and profitable discoveries. For nature is henceforth to be a book accessible to the bibliographical researches of the studious, a world open to the investigations of the thinker, a fertile region which the human mind has already visited, and in which we must needs advance boldly, holding in our hand experience as our compass. . . .

An old friend of my terrestrial life recently spoke to me as follows. One of our wanderings had brought us back to the Earth, and we were making a new moral study of this world. My companion remarked that man is to-day familiar with the most abstract laws of mechanics, physics, chemistry, . . . that the applications of knowledge to industry are not less remarkable than the deductions of pure science, and that it seems as if the entire universe, wisely studied by man, was to be his royal appanage. As we pursued our journey beyond the bounds of this world, I answered him in the following terms:

"A feeble atom, lost to sight in an imperceptible point of the infinite, man has believed he could embrace in the sweep of his vision the whole expanse of the universe, whereas he can scarcely pass beyond the region he inhabits; he has thought he could study the laws of all nature, and his investigations have scarcely reached the forces in action about him; he has thought he could determine the grandeur of the starry heaven, and he exhausted his powers in the study of a grain of dust. The field of his researches is so small that, once lost to view, the mind seeks in vain to recover it; the human heaven and earth are so small that scarcely has the soul in its flight had time to spread its wings before it has reached the last regions accessible to the observation of man; for the immeasurable Universe surrounds us on all sides, unfolding beyond the limits of our heavens its unknown riches, putting its inconceivable forces into play, and reaching forward into immensity in the splendor of its life.

"And the mere flesh-worm, the miserable mite, blind and wingless, whose wretched existence is passed upon the leaf

where it was born, would presume (because forsooth it has taken a few steps upon this leaf shaken in the wind) to have the right to speak of the immense tree to which it belongs, of the forest of which this tree forms a part, and to sagely descant upon the nature of the vegetation developed thereon, of the beings that inhabit it, of the distant sun whose rays bring to it movement and life? In very truth, man is strangely presumptuous to desire to measure infinite greatness by the foot-rule of his infinite littleness.

"Therefore be this truth well impressed on his mind,—if the arid labors of past ages have acquired for him an elementary knowledge of things, if the progress of thought has placed him at the vestibule of knowledge, still he has not yet spelled out more than the first page of the Book, and, like a child, liable to be deceived by every word, far from claiming the right to authoritatively interpret the work, he ought to content himself with humbly studying it, page by page, line by line. Happy, however, those who are able to do this!"

GALILEO.

These were my customary thoughts. They are the thoughts of a student of nineteen or twenty who has acquired the habit of thinking. There can be no doubt that they were wholly the product of my own intellect, and that the illustrious Florentine astronomer had nothing whatever to do with them. Besides, this would have been a collaboration to the last degree improbable.

It has been the same with all the communications of the astronomical class: they have not led the science forward a single step. Nor has any obscure, mysterious, or illusive point in history been cleared up by the spirits. We only write that which we know, and even chance has given us nothing. Still, certain unexplained thought-transferences are to be discussed. But they belong to the psychological or human sphere.

In order to reply at once to objections that certain Spirit-

ualists have sent to me apropos of this result of my observations, I will take as an example the case of the satellites of Uranus, since it is the chief one always brought forward as a *proof* of scientific discoveries imparted by spirits. Furthermore, I received several years ago from divers sources a pressing invitation to examine an article by General Drayson, published in the journal named *Light,* in 1884, under the title of *The Solution of Scientific Problems by Spirits,* in which it is asserted that the spirits made known the true orbital movement of the satellites of Uranus. Pressing engagements had always hindered me from making this examination; but the case having been recently promulgated in several Spiritualistic works as decisive, and I being so persistently importuned to discuss it, I believe it will prove of some use if I now examine the case.

To my great regret there is an error in their communication, and the spirits have taught us nothing. Here is one instance, wrongly selected as a demonstration. The Russian writer Aksakof sets it forth in the following terms (*Animism and Spiritualism,* p. 341):

The case of which we are about to give an account seems to be of such a nature as to settle all objections. It was communicated by Major-General A. W. Drayson and published under the title *The Solution of Scientific Problems by Spirits.* I append a translation:

"Having received from M. Georges Stock a letter asking me if I could mention, were it only as an instance, that, during the holding of a séance, a spirit had solved one of those scientific problems which have always embarrassed scientists, I have the honor to communicate to you the following circumstance, which I witnessed with my own eyes:

"In 1781 William Herschel discovered the planet Uranus and its satellites. He observed that these satellites, contrary to all the other satellites of the solar system, traversed their orbits from east to west. Sir John Herschel says in his *Outlines of Astronomy:*

"'The orbits of these satellites present peculiarities altogether unexpected and exceptional, contrary to the general laws which govern the other bodies of the solar system. The planes of their orbits are almost perpendicular to the ecliptic, making an angle of 70° 58′,* and they travel with a retrograde movement; that is to say, their revolution about the centre of their planet takes place from east to west in place of following the inverse course.'

"When Laplace broached his theory that the sun and all the planets were formed at the expense of a nebulous matter, these satellites were an enigma to him.

"Admiral Smyth mentions in his *Celestial Cycle* that the movement of these satellites, to the stupefaction of all astronomers, is retrograde, contrary to that of all the other bodies observed up to that time.

"All the astronomical works published before 1860 contain the same reasoning on the subject of the satellites of Uranus. For my part, I did not find any explanation for this peculiarity: to me it was a mystery as much as for the writers whom I have cited.

"In 1858 I had as a guest in my house a lady who was a medium, and we arranged daily séances. One evening she said to me that she saw at my side a spirit who claimed to have been an astronomer during his life on earth.

"I asked this person if he was wiser at present than when he lived on the earth. 'Much wiser,' he said. I had the idea of asking this so-called spirit a question the object of which was to test his knowledge. 'Can you tell me,' I asked him, 'why the satellites of Uranus make their revolution from east to west and not from west to east?' I received at once the following reply:

"'The satellites of Uranus do not move in their orbits from east to west: they circle about their planet from west to east, in the same way that the moon moves around the earth. The error comes from the fact that the south pole of Uranus was turned toward the earth at the moment of the discovery of this planet. In the same way that the sun, seen from our southern hemisphere, seems to run its daily course from right

*This inclination is really 82°, reckoning from the south, or 98° (90 + 8°), counting from the north (see Fig. A).

to left and not from left to right, so the satellites of Uranus were moving at that time from left to right, though this does not mean they were moving in their orbit from east to west.'

"In reply to another question which I asked, my interlocutor added: 'As long as the south pole of Uranus was turned toward the earth, in relation to a terrestrial observer, the satellites seemed to move from left to right, and it was erroneously concluded from this that they were going from east to west: this state of things lasted for about forty-two years. When the north pole of Uranus is turned toward the earth, his satellites run their course from right to left, but, in either case, always from the west to the east.'

"I thereupon asked him how it happened that the error had not been detected forty-two years after William Herschel's discovery of Uranus. He replied, 'It is because people repeat that which the authorities who have preceded them have said. Dazzled by the results obtained by their predecessors, they do not take the trouble to think.'"

Such is the "revelation" of a spirit on the system of Uranus, published by Drayson and presented by Aksakof and other authors as an undeniable proof of the intervention of a spirit in the solution of this problem.

The following is the result of an impartial discussion of this very interesting subject. The reasoning of the "spirit" is false. The system of Uranus is almost perpendicular to the plane of its orbit. It is the direct opposite of that of the satellites of Jupiter, which turn almost in the plane of their orbit. The inclination of the plane of the satellites to the ecliptic is 98°, and the planet ascends almost in the plane of the ecliptic. This is a fundamental consideration in the picture which we ought to make to ourselves of the aspect of this system seen from the earth.

Let us, however, adopt for the method of movement of these satellites around their planet the projection upon the plane of the ecliptic, as has always been the custom. The author maintains that, "when the north pole of Uranus is turned toward the earth, his satellites run their course from

right to left, that is to say from west to east"; he indorses the communication of the spirit to the effect that the astronomers are in error and that the satellites of Uranus really revolve around their planet from west to east, in the same way that the moon revolves around the earth.

In order to give ourselves an exact account of the position and of the method of the movements of this system, let us construct a special geometrical figure, clear and precise. Let us represent upon a plane the appearance of the orbit of Uranus and of its satellites seen from the northern hemisphere of the celestial sphere (Fig. A). The part of the orbit of the satellites above the plane of the orbit of Uranus has been drawn with heavy lines and hatching, the lower part in dotted lines only.

It is easily seen by the direction of the arrows that the revolution of the satellites, projected upon the plane of the orbit, is entirely retrograde. All dogmatic affirmations to the contrary are absolutely erroneous.

These satellites turn like the hands of a watch,— from left to right, looking at the upper part of the circles.

The error of General Drayson's medium comes from the fact that she maintained that the south pole of Uranus was turned toward us at the date of its discovery. Now, in 1781, the system of Uranus occupied relatively to us almost the same situation as in 1862, since the time of its revolution is eighty-four years. It is evident from the figure that, at that moment, the planet presented to us the pole most elevated above the ecliptic; that is, its north pole.

General Drayson allowed himself to be led into error when he adopted without verification these paradoxical premises. As a matter of fact, if Uranus had presented to us its south pole in 1781, the movement of the satellites would have been direct. But the observations of the angle of position of the orbits at the time of their passage of the nodes gives us

abundant evidence that it was really the north pole which was at that moment turned toward the sun and the earth,—a fact which renders direct movement impossible, retrograde movement certain.

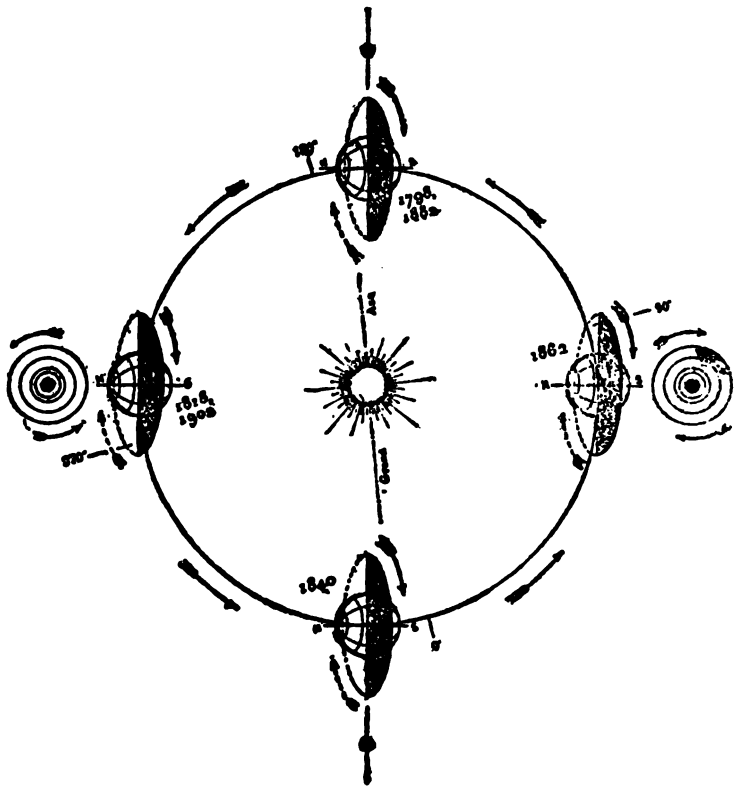

Fig. 1.—The inclination of the system of Uranus. Aspects seen from the earth at the four extreme positions.

For greater clearness, I have placed outside of the orbit, in Fig 1, the aspect of the system of Uranus seen from the earth at the four principal epochs of the revolution of this distant planet. It is evident that the apparent method of the revolution was analogous to that of the hands of a

watch in 1781 and 1862, the opposite in 1818 and 1902. At these dates the apparent orbits of the satellites are almost circles, while during the passage of the nodes, in 1798, 1840, and 1882, they are reduced to straight lines.

Figure 1a completes these data by presenting the aspect of the orbits and the method of revolution for all the positions of the planet, even down to our own epoch.

I have desired to completely elucidate this question, which is a little technical. *To my great regret,* the spirits have taught us nothing, and this example, to which so much importance is attached, is seen to be an error.*

Aksakof cites, in this same chapter (p. 343), the discovery of the two satellites of Mars, also made by Drayson through a medium, in 1859; that is to say, 18 years before their discovery, in 1877. This discovery, not having been published at the time, remains doubtful. Furthermore, after Kepler had pointed out its probability, this subject of the two satellites of Mars was several times discussed, notably by Swift and Voltaire (see my *Popular Astronomy,* p. 501). This is not, then, to be set down as an undeniable instance of a discovery made by the spirits.

The immediately foregoing instances are facts actually observed at Spiritualistic séances. I will not treat them under a generalization foreign to their proper setting. They do not prove that, in certain circumstances, thinkers, poets, dreamers, investigators, may not be inspired by influences emanating from others, from loved ones, from de-

* I have just found in my library a book which was sent to me in 1888 by the author, Major-General Drayson, the title of which is *Thirty Thousand Years of the Earth's Past History, Read by Aid of the Discovery of the Second Rotation of the Earth.* This second rotation would take place about an axis the pole of which would be 29° 25′ 47″ from the pole of the daily rotation, about 270 right ascension, and would be accomplished in 32,682 years. The author seeks to explain it by the glacial periods and variations of climate. But his work is full of confusions most strange and even unpardonable in a man versed in astronomical studies. The truth is that this General Drayson (who died several years ago) was not an astronomer.

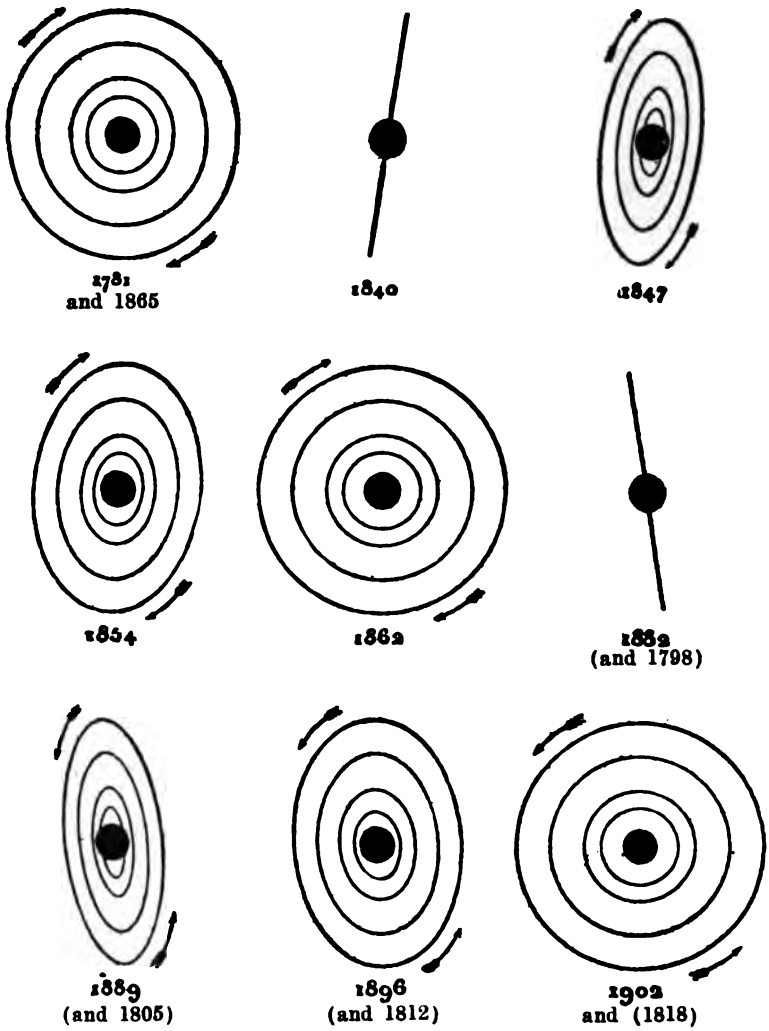

Fig. 1a.—Orbits of the satellites of Uranus as seen from the earth at different dates since the time of their discovery (1781).

parted friends. That is another question, a topic quite apart from experiments which we are giving an account of in this book.

The same author, otherwise generally very judicious, cites several examples of foreign tongues spoken by mediums. I have not been able to verify them, and I am asked not to say here anything but what I am absolutely sure of.

According to my personal observations, these experiments bring us constantly into the presence of ourselves, our own minds. I could cite a thousand examples of this.

One day I received an "aërolite" discovered in a forest in the environs of Etrepagny (Eure). Mme. J. L., who kindly sent it to me, added that she consulted a spirit about its origin and that he replied to her that it came from a star named Golda. Now in the first place there is no star of this name; and, secondly, this is not an aërolite at all, but a piece of slag from an old forge. (See Section 662 of my Inquiry of 1899. The first of these sections, relating to telepathy, have been published in my work *The Unknown.*)

A lady reader of mine wrote me from Montpellier:

Your conclusions would perhaps diminish the prestige of Spiritualism in the eyes of certain persons. But, as prestige may produce superstition, it is well to clear up matters. For my part, that which you have observed agrees with what I have myself observed. This is the method which I have employed, aided by a friend:

I took a book and, opening it, retained in my mind the number of the right-hand page. Suppose it was 132. I said to the table, which had been put in movement by the little manœuvre ordinarily used, "Does a spirit desire to communicate?"

Reply —"Yes."

Question —"Can you see the book which I have just been looking at?"

Reply —"Yes."

"How many numbers are there on the page that I have been looking at?"

"Three."

"Indicate the number of hundreds."

"One."

"Indicate the value of the tens."

"Three."

"Indicate the value of the units."

"Two."

The amounts indicated in these statements are of course 132. It was enchanting.

Then, taking the closed book and, without opening it, sliding the paper-knife between the pages, I resumed the conversation, and the result with this last method was always inexact.

I frequently repeated this little experience (curious at any rate); and, every time, I had exact replies when I knew them, inexact when I was ignorant of them. (Section 657 of my Inquiry.)

These examples might be multiplied *ad infinitum*. Everything leads us to think that it is we who are the actors in these experiments. But it is not so simple as one might suppose, and there is something else in it as well as ourselves. Certain unexplained things take place.

In his remarkable work, *Intelligence,* Taine explains Spiritualistic communications by a sort of unconscious duplication of our mind, as I said above.

The more singular a fact is [he writes *] the more instructive it is. In this respect, Spiritualistic manifestations themselves point the way to discoveries by showing us the coexistence at the same moment in the same individual of two thoughts, two wills, two distinct actions, the one conscious, the other unconscious; the latter he attributes to invisible beings. The brain is, then, a theatre on the stage of which several pieces are being played at once, upon several

* *Intelligence*, Vol. I., preface, p. 16, edition of 1897. The first edition was published in 1868.

planes, of which only one is not subliminal. Nothing is more worthy of study than this plurality of the *me*. I have seen a person who, while speaking or singing, writes, without regard to the paper, consecutive sentences and even entire pages, without any knowledge of what she is writing. In my eyes her sincerity is perfect. Now she declares that at the end of a page she has no idea of what she has written on the paper. When she reads it, she is astonished, sometimes alarmed. The handwriting is different from her ordinary handwriting. The movement of the fingers and of the pencil is stiff and seems automatic. The writing always ends with a signature, that of a deceased person, and bears the mark of intimate thoughts, of a secret and inner reserve of ideas which the author would not like to divulge. Certainly there is proof here of a doubling of the *me*, the coexistence of two parallel and independent trains of thought, of two centres of action, or, if you wish, of two moral persons existing in the same brain, each one doing his work, and each one a different work, the one upon the stage and the other behind the scenes, the second as complete as the first, since, alone and unwitting of the other, it constructs consecutive ideas and fashions connected sentences in which the other has no part.

This hypothesis is admissible, in the light of numerous observations of double consciousness.*

It is applicable to a great number of cases, but not in all. It explains automatic writing. But, as it stands, it is necessary to stretch it considerably to make it explain the rappings (for who raps?), and it does not explain at all the levitations of the table, nor the displacement of objects of which I have spoken in the first chapter, and I do not very well see how it can even explain phrases rapped out backwards or by the strange combinations described above. This

* All those who occupy themselves with these questions are acquainted, among other cases, with that of Felida (studied by Dr. Azam). In the story of this young girl she is shown as endowed with two distinct personalities to such an extent that, in the second state, she becomes amorous . . . and enceinte, without knowing anything about it in her normal condition. These states of double personalities have been methodically observed for thirty years.

hypothesis is admitted and developed in a more unqualified way by Dr. Pierre Janet in his work *Psychological Automatism.* This author is one of those who have created a narrow circle of observation and study, and who not only never emerge from it, but imagine that they have got the whole universe in their circle. In going over this kind of reasoning, one thinks involuntarily of that old quarrel of the two round eyes who saw everything round and of the two square eyes who saw everything square, and of the history of the Big-endians and of the Little-endians of *Gulliver's Travels.* An hypothesis is worthy of attention when it explains something. Its value does not increase by the attempt to generalize it and make it explain everything: this is to overpass all reasonable limits.

We may admit that the sub-conscious acts of an abnormal personality, temporarily grafted upon our normal personality, explain the greater part of mediumistic writing communications. We can see in these also the evident effects of auto-suggestion. But these psycho-physiological hypotheses do not explain all observations. There is something else.

We all have a tendency to want to explain everything by the actual state of our knowledge. In the face of certain circumstances, we say to-day: "It is suggestion, it is hypnotism, it is this, it is that." Half a century ago we would not have talked in this way, these theories not having yet been invented. People will no longer talk in the same way half a century, a century, hence, for new words will have been invented. But let us not be put off with words; let us not be in such a hurry.

We must know how to explain in what way our thoughts — conscious, unconscious, sub-conscious — can strike blows in a table, move it, lift it. As this question is rather embarrassing, Dr. Pierre Janet treats it as "secondary personality," and is obliged to have recourse to the movements of

the toes, to the snapping of the muscles of the fibular tendon, to ventriloquism and the deceptions of unconscious accomplices.* This is not a sufficient explanation.

As a matter of fact, we do not understand how our thought, or that of another, can cause raps in a table, by which sentences are formed. But we are obliged to admit it. Let us call it, if you please, "telekinetsis"; but does that get us any farther along?

There has been talk for some years about unconscious facts, about sub-consciousness, subliminal consciousness, etc. I fear that in these things also we are putting ourselves off with words which do not explain things very much.

I intend some day, if the time is given me, to write a special book on Spiritualism, studied from the theoretic and doctrinal point of view, which will form a second volume of my work *The Unknown and Psychic Problems,* and which has been in preparation since the publication of that work in 1899. Mediumistic communications, dictations received (notably by Victor Hugo, Mme. de Girardin, Eugène Nus, and the Phalansterians), will be the subject of special chapters in this volume,— as well as the problem, otherwise important, of the plurality of existences.

It is not my intention to enlarge in this place upon the aspects of the general question. That which I restrict myself to establishing in this book is that there are in us, about us, unknown forces capable of putting matter in motion, just as our will does. I ought, therefore, to limit myself to material phenomena. The range of that class of investigations is already immense, and the "communications" of which I have just spoken are really outside the limits of this range. But, as this subject and that of psychological experiments are continually overlapping, it was necessary to give a summary of it in this place. Let us

* *Psychological Automatism,* p. 401–402.

return for the present to the material phenomena produced by mediums and to that which I have myself ascertained in my experiences with Eusapia Paladino, who unites them nearly all in her own personality and experiences.

CHAPTER III

MY EXPERIMENTS WITH EUSAPIA PALADINO.

In the earlier pages of this volume some of my later experiments with the Neapolitan medium, Eusapia Paladino, have been described. We shall now revert to the earlier ones.

My first experimental séance with this remarkable medium took place on the 27th of July, 1897. In response to the invitation of an excellent and honorable family,— that of Blech,— the name of which has for a long time been happily associated with modern researches in theosophy, occultism, and psychological studies, I betook myself to Montfort-l'Amaury, to make the personal acquaintance of this medium, whose case had already been studied in several particulars by MM. Lombroso, Charles Richet, Ochorowicz, Aksakof, Schiaparelli, Myers, Lodge, A. De Rochas, Dariex, J. Maxwell, Sabatier, De Watteville, and a great number of other scholars and scientists of high standing. Mme. Paladino's gifts had even been made the subject of a work by Count de Rochas upon *The Externalization of Motivity,* as well as of innumerable articles in the special reviews.

The impression that results from the reading of all the official reports is not altogether satisfactory, and besides leaves us with our curiosity entirely ungratified. On the other hand, I can say, as I have already had occasion to remark, that, during the last forty years, almost all the celebrated mediums have been present at one time or another in my salon in the avenue l'Observatoire in Paris, and

that I have detected them nearly all in trickery. Not that they always deceive: those who affirm this are wrong. But, consciously or unconsciously, they bring with them an element of trouble against which one is obliged to be constantly on guard, and which places the experimenter in conditions diametrically opposed to those of scientific observation.

Apropos of Eusapia I had received from my illustrious colleague, M. Schiaparelli, director of the observatory at Milan, to whom science is indebted for so many important discoveries, a long letter from which I will quote a few passages:

During the autumn of 1892 I was invited by M. Aksakof to be present at a certain number of Spiritualistic séances held under his direction and care, for the purpose of meeting the medium Eusapia Paladino, of Naples. I saw a number of very surprising things, a part of which, to tell the truth, could be explained by very ordinary means. But there are others the production of which I should not know how to explain by the known principles of natural philosophy. I add, without any hesitation, that, if it had been possible to entirely exclude all suspicion of deceit, one would have had to recognize in these facts the beginning of a new science pregnant with consequences of the highest importance. But it must be admitted that these experiments have been made in a manner little calculated to convince impartial judges of their sincerity. Conditions were always imposed that hindered the right comprehension of what was really taking place. When we proposed modifications in the program suited to give to the experiments the stamp of clearness and to furnish evidence that was lacking, the medium invariably declared that, if we did so, the success of the séance would thereby be made impossible. In fine, we did not *experiment* in the true sense of the word: we were obliged to be content with *observing* that which occurred under the unfavorable circumstances imposed by the medium. Even when mere observation was pushed a little too far, the phe-

nomena were no longer produced or lost their intensity and their marvellous nature. Nothing is more offensive than these games of hide-and-seek to which we are obliged to submit.

All that kind of thing excites distrust. Having passed all my life in the study of nature, which is always sincere in its manifestations and logical in its processes, it is repugnant to me to turn my thoughts to the investigation of a class of truths, which it seems as if a malevolent and disloyal power was hiding from us with an obstinacy the motive of which we cannot comprehend. In such researches it is not sufficient to employ the ordinary methods of natural philosophy, which are infallible, but very limited in their action. We must have recourse to that other critical method, more subject to error, but more audacious and more powerful, of which police officers and examining magistrates make use when they are trying to bring out a truth in the midst of disagreeing witnesses, a part at least of whom have an interest in hiding that truth.

In accordance with these reflections, I cannot say that I am convinced of the reality of the things which are comprised under the ill-chosen name of Spiritualism. But neither do I believe in our right to deny everything; for, in order to have a good basis for denial, it is not sufficient to *suspect* fraud, it is necessary to *prove it.* These experiments, which I have found very unsatisfactory, other experimenters of great confidence and of established reputation have been able to make in more favorable circumstances. I have not enough presumption to oppose a dogmatic and unwarranted denial to proofs in which scientists of great critical ability, such as MM. Crookes, Wallace, Richet, Oliver Lodge, have found a solid basis of fact and one worthy their examination, to such an extent that they have given to it years of study. And we should deceive ourselves if we believed that men convinced of the truth of Spiritualism are all fanatics. During the experiments of 1892 I had the pleasure of knowing some of these men. I was obliged to admire their sincere desire to know the truth; and I found, in the case of several of them, philosophic ideas very sensible and very profound, joined to a moral character altogether worthy of esteem.

That is the reason why it is impossible for me to declare that Spiritualism is a ridiculous absurdity. I ought, then, to abstain from pronouncing any opinion whatever: my mental state on this subject may be defined by the word "agnosticism."

I have read with much attention all that the late Professor Zöllner has written on this subject. His explanation has a purely material basis,— that is to say, it is the hypothesis of the objective existence of a fourth dimension of space, an existence which cannot be comprised within the scope of our intuition, but the possibility of which cannot be denied on that ground alone. Once grant the reality of the experiments which he describes, and it is evident that his theory of these things is the most ingenious and probable that can be imagined. According to this theory, mediumistic phenomena would lose their mystic or mystifying character and would pass into the domain of ordinary physics and of physiology. They would lead to a very considerable extension of the sciences, an extension such that their author would deserve to be placed side by side with Galileo and Newton. Unfortunately, these experiences of Zöllner were made with a medium of poor reputation. It is not only the sceptics who doubt the good faith of M. Slade: it is the Spiritualists themselves. M. Aksakof, whose authority is very great in similar matters, told me himself that he had detected him in trickery. You see by this that these theories of Zöllner lose any support they might have derived from the exact demonstration of experiment, at the same time that they remain very beautiful, very ingenious, and quite possible.

Yes, quite possible in spite of everything; in spite of the lack of success that I had when I tried to reproduce them with Eusapia. On the day when we shall be enabled to make, with absolute sincerity, *a single one* of these experiments, the matter will have made great progress; from the hands of charlatans it will have passed into those of physicists and physiologists.

Such is the communication made to me by M. Schiaparelli. I found his reasoning to be without defect, and it was in a state of mind entirely analogous to his that I ar-

rived at Monfort-l'Amaury (with all the more interest because Slade was one of the mediums of whom I was just now speaking).

Eusapia Paladino was introduced to me. She is a woman of very ordinary appearance, a brunette, her figure a little under the medium height. She was forty-three years old, not at all neurotic, rather stout. She was born on January 21, 1854, in a village of La Pouille; her mother died while giving birth to the child; her father was assassinated eight years afterward, in 1862, by brigands of southern Italy. Eusapia Paladino is her maiden name. She was married at Naples to a merchant of modest means named Raphael Delgaiz, a citizen of Naples. She manages the petty business of the shop, is illiterate, does not know how to either read or write, understands only a little French. I conversed with her, and soon perceived that she has no theories and does not burden herself by trying to explain the phenomena produced by her.

The salon in which we are going to conduct our experiments is a room on the ground floor, rectangular, measuring twenty feet in length by nineteen in breadth; there are four windows, an outside entrance door and another in the vestibule.

Before the sitting, I make sure that the large doors and windows are closely shut by window-blinds with hooks and by wooden blinds on the inside. The door of the vestibule is simply locked with a key.

In an angle of the salon, at the left of the large entrance door, two curtains of a light color have been stretched on a rod, joining in the middle and forming thus a little cabinet. In this cabinet there is a sofa, and leaning against this a guitar; on one side is a chair, on which have been placed a music-box and a bell. In the recess of the window which is included in the cabinet there is a music-rack, upon which

has been placed a plate containing a well-smoothed cake of glazier's putty, and under which, on the floor, is a huge tray containing a large smoothed cake of the same. We have prepared these plaques of putty because the annals of Spiritualism have often shown the imprint of hands and of heads produced by the unknown beings whom it is our business in this work to investigate. The large tray weighs about nine pounds.

Why this dark cabinet? The medium declares it is necessary to the production of the phenomena "that relate to the condensation of fluids."

I should prefer that there should be nothing of the kind. But the conditions must be accepted, though we must have an exact understanding about them. Behind the curtain the stillness of the aërial waves is at its maximum, the light at its minimum. It is curious, strange, infinitely regrettable that light prohibits certain effects. Undoubtedly, it would not be either philosophic or scientific to oppose this condition. It is possible that the radiations, the forces, which act may be the rays of the invisible end of the spectrum, I have already had occasion to remark, in the first chapter, that he who would seek to make photographs without a dark chamber would cloud over his plate and obtain nothing. The man who would deny the existence of electricity because he had been unable to obtain a spark in a damp atmosphere would be in error. He who would not believe in the existence of stars because we only see them at night would not be very wise. Modern progress in natural philosophy has taught us that the radiations that impinge on the retina represent only the smallest fraction of the totality. We can then admit the existence of forces which do not act in the full light of day. But, in accepting these conditions, the essential point is not to be their dupe.

Hence, before the séance, I examined carefully the nar-

row corner of the room before which the curtain was stretched, and I found nothing except the objects mentioned above. Nowhere in the room was there any sign whatever of concealed mechanism, no electric wires or batteries or anything of the kind, either on the floor or in the walls. Moreover, the perfect sincerity of M. and Mme. Blech is beyond all suspicion.

Before the séance, Eusapia was undressed and dressed before Mme. Zelma Blech. Nothing suspicious was found.

The sitting was begun in full light, and I constantly laid stress upon obtaining the largest number of phenomena we could in the full light of day. It was only gradually, according as the "spirit" begged for it, that the light was turned down. But I obtained the concession that the darkness should never be absolute. At the last limit, when the light had to be entirely extinguished, it was replaced by one of the red lanterns used by photographers.

The medium sits *before* the curtain, turning her back to it. A table is placed before her,— a kitchen table, made of spruce, weighing about fifteen pounds. I examined this table and found nothing in it suspicious. It could be moved about in every direction.

I sit at first on the left of Eusapia, then at her right side. I make sure as far as possible of her hands, her legs, and her feet, by personal control. Thus, for example, to begin with, in order to be sure that she should not lift the table either by her hands or her legs, or her feet, I take her left hand in my left hand, I place my right open hand upon her knees, and I place my right foot upon her left foot. Facing me, M. Guillaume de Fontenay, no more disposed than I to be duped, takes charge of her right hand and her right foot.

There is full light,—a big kerosene lamp with a wide burner and a light yellow shade, besides two lighted candles.

At the end of three minutes the table begins to move, balancing itself, and rising sometimes to the right, sometimes to the left. A minute afterwards it is *lifted entirely from the floor,* to a height of about nine inches, and remains there two seconds.

In a second trial, I take the two hands of Eusapia in mine. A notable levitation is produced, nearly under the same conditions.

We repeat the same experiments thrice, in such a way that five levitations of the table take place in a quarter of an hour, and for several seconds the four feet are completely lifted from the floor, to the height of about nine inches. During one of the levitations the experimenters did not touch the table at all, but formed the chain above it and in the air; and Eusapia acted in the same way.

So then it seems that an object can be lifted, in opposition to the law of gravity, without the contact of the hands which have just been acting upon it. (Proof already given above, pp. 5–8, 16.)

A round centre table placed at my right comes forward without contact towards the table, always in full light, be it understood, as if it would like to climb up on it, and falls down. Nobody has moved aside or approached the curtain, and no explanation of this movement can be given. The medium has not yet entered into a trance and continues to take part in the conversation.

Five raps in the table indicate, according to a convention arranged by the medium, that the unknown cause asks for less light. This is always annoying: I have already said what I think of this. The candles are blown out, the lamp turned down, but the light is strong enough for us to see very distinctly everything that takes place in the salon. The round table, which I had lifted and set aside, approaches the table and tries several times to climb up on it.

I lean upon it in order to keep it down, but I experience an elastic resistance and am unable to do so. The free edge of the round table places itself on the edge of the rectangular table, but, hindered by its triangular foot, it does not succeed in clearing itself sufficiently to climb upon it. Since I am holding the medium, I ascertain that she makes no effort of the kind that would be needed for this style of performance.

The curtain swells out and approaches my face. It is at this moment that the medium falls into a trance. She utters sighs and lamentations and only speaks now in the third person, saying that she is John King, a psychic personality who claims to have been her father in another existence and who calls her "my daughter" (*mia figlia*). This is an auto-suggestion proving nothing as to the identity of the force.

Five new taps ask for still *less light,* and the lamp is almost completely turned down, but not extinguished. The eyes, growing accustomed to the clare-obscure, still distinguish pretty well what is taking place.

The curtain swells out again, and I feel that I am touched on the shoulder, through the stuff of the curtain, as if by a closed fist. The chair in the cabinet, upon which are placed the music-box and the bell, is violently shaken, and the objects fall to the floor. The medium asks again for *less light,* and a red photographic lantern is placed upon the piano, the light of the lamp being extinguished. The control is rigorously kept up, the medium agreeing to it with the greatest docility.

For about a minute the music-box plays intermittent airs behind the curtain, as if it was turned by some hand.

The curtain moves forward again toward me, and a rather strong hand seizes my arm. I immediately reach forward to seize the hand, but I grasp only the empty air. I

hen press the two legs of the medium between mine and I take her left hand in my right. On the other side, her right hand is firmly held in the left hand of M. de Fontenay. Then Eusapia brings the hand of the last named toward my cheek, and imitates upon the cheek, with the finger of M. de Fontenay, the movement of a little revolving crank or handle. The music-box, which has one of these handles, *plays at the same time behind the curtain in perfect synchronism.* The instant that Eusapia's hand stops, the music stops: all the movements correspond, just as in the Morse telegraphic system. We all amused ourselves with this. The thing was tried several times in succession, and every time the movement of the finger tallied the playing of the music.

I feel several touches in the back and on the side. M. de Fontenay receives a hard slap on the back that everybody hears. A hand passes through my hair. The chair of M. de Fontenay is violently pulled, and a few moments afterwards he cries, "I see the silhouette of a man passing between M. Flammarion and me, above the table, shutting out the red light!"

This thing is repeated several times. I do not myself succeed in seeing this silhouette. I then propose to M. de Fontenay that I take his place, for, in that case, I should be likely to see it also. I soon distinctly perceive a dim silhouette passing before the red lantern, but I do not recognize any precise form. It is only an opaque shadow (the profile of a man) which advances as far as the light and retires.

In a moment, Eusapia says there is some one behind the curtain. After a slight pause she adds:

"There is a man by my side, on the right: he has a great soft forked beard." I ask if I may touch this beard. In

fact, while lifting my hand, I feel a rather soft beard brushing against it.

A block of paper is put on the table with a lead-pencil, with the hope of getting writing. This pencil is flipped clear across the room. I then take the block of paper and hold it in the air: it is snatched violently from me, in spite of all my efforts to retain it. At this moment, M. de Fontenay, with his back turned to the light, sees a hand (a white hand and not a shadow), the arm showing as far as the elbow, holding the block of paper; but all the others declare that they only see the paper shaking in the air.

I did not see the hand snatch the packet of paper from me; but only a hand could have been able to seize it with such violence, and this did not appear to be the hand of the medium, for I held her right hand in my left, and the paper with arm extended in my right hand, and M. de Fontenay declared that he did not let go of her left hand.

I was struck several times in the side, touched on the head, and my ear was smartly pinched. I declare that after several repetitions I had enough of this ear pinching; but during the whole séance, in spite of my protestations, somebody kept hitting me.

The little round table, placed outside of the cabinet, at the left of the medium, approaches the table, climbs clear up on it and lies across it. The guitar in the cabinet is heard moving about and giving out sounds. The curtain is puffed out, and the guitar is brought upon the table, resting upon the shoulder of M. de Fontenay. It is then laid upon the table, the large end toward the medium. Then it rises and moves over the heads of the company without touching them. It gives forth several sounds. The phenomenon lasts about fifteen seconds. It can readily be seen that the guitar is floating in the air, and the reflection of the red lamp glides over its shining surface. A rather

bright gleam, pear-shaped, is seen on the ceiling in the other corner of the room.

The medium, who is tired, asks for rest. The candles are lighted. Mme. Blech returns the objects to their places, ascertains that the cakes of putty are intact, places the smallest upon the little round table and the large one upon the chair in the cabinet, behind the medium. The sitting is resumed by the feeble glimmer of the red lantern.

The medium, whose hands and feet are carefully controlled by M. de Fontenay and myself, breathes heavily. Above her head the snapping of fingers is heard. She still pants, groans, and sinks her fingers into my hand. Three raps are heard. She cries, "It is done" (*"E fatto"*). M. de Fontenay brings the little dish beneath the light of the red lantern and discovers the impression of four fingers in the putty, in the position which they had taken when she gripped my hand.

Seats are taken, the medium asks for rest, and a little light is turned on.

The sitting is soon resumed as before, by the extremely feeble light of the red lantern. John is spoken of as if he existed, as if it was he whose head we perceived in silhouette; he is asked to continue his manifestations, and to show the impression of his head in the putty, as he has already several times done. Eusapia replies that it is a difficult thing and asks us not to think of it for a moment, but to go on speaking. These suggestions of hers are always disquieting, and we redouble our attention, though without speaking much. The medium pants, groans, writhes. The chair in the cabinet on which the putty is placed is heard to move. The chair comes forward and places itself by the side of the medium, then it is lifted and placed upon the head of Mme. Z. Blech, while the tray is lightly placed in the hands of M. Blech, at the other end of the table. Eu-

sapia cries that she sees before her a head and a bust, and says, "*E fatto*" ("It is done"). We do not believe her, because M. Blech has not felt any pressure on the dish. Three violent blows as of a mallet are struck upon the table. The light is turned on, and a human profile is found imprinted upon the putty.

Mme. Z. Blech kisses Eusapia upon both cheeks, for the purpose of finding out whether her face has not some odor (glazier's putty having a very strong odor of linseed oil which remains for some time upon the fingers). She discovers nothing abnormal.

This discovery of a "spirit head" in the putty is so astonishing, so impossible to admit without sufficient verification, that it is really still more incredible than all the rest. It is not the head of the man whose profile I perceived, and the beard I felt on my hand is not there. The imprint has a resemblance to Eusapia's face. If we supposed she produced it herself, that she was able to bury her nose up to the cheeks and up to the eyes in that thick putty, we should still have to explain how that large and heavy tray was transported from the other end of the table and gently placed in the hands of M. Blech.

The resemblance of the imprint to Eusapia was undeniable. I reproduce both the print and the portrait of the medium.* Every one can assure himself of it. The simplest thing, evidently, is to suppose the Italian woman imprinted her face in the putty.

But how?

We are in the dark as to this, or nearly so. I sit at the right hand of Eusapia, *who rests her head upon my left shoulder,* and whose right hand I am holding. M. de Fontenay is at her left, and has taken great care not to let go

* See Pl. IV. and V. I preserve with care a plaster cast of this imprint.

of the other hand. The tray of putty, weighing nine pounds, has been placed upon a chair, twenty inches behind the curtain, consequently behind Eusapia. She cannot touch it without turning around, and we have her entirely in our power, our feet on hers. Now the chair upon which was the tray of putty has drawn aside the hangings, or portières, and moved forward to a point above the head of the medium, who remained seated and held down by us; moved itself also over our heads,— the chair to rest upon the head of my neighbor, Mme. Blech, and the tray to rest softly in the hands of M. Blech, who is sitting at the end of the table. At this moment Eusapia rises, declaring that she sees upon the table another table and a bust, and cries out, "*E fatto*" ("It is done"). It was not at this time, surely, that she would have been able to place her face upon the cake, for it was at the other end of the table. Nor was it before this, for it would have been necessary to take the chair in one hand and the cake with the other, and she did not stir from her place. The explanation, as can be seen, is very difficult indeed.

Let us admit, however, that the fact is so extraordinary that a doubt remains in our mind, because the medium rose from her chair almost at the critical moment. And yet her face was immediately kissed by Mme. Blech, who perceived no odor of the putty.

Dr. Ochorowicz writes as follows apropos of these prints of faces and of the study which he made of them at Rome:*

The imprint of this face was obtained in darkness, yet at a moment when I held the two hands of Eusapia, while my arms were entirely around her. Or, rather, it was she who clung to me in such a way that I had accurate knowledge of the position of all her limbs. Her head rested against mine,

* A. de Rochas, *The Externalization of Motivity*, fourth edition, 1906, p. 406.

PLATE IV. PLASTER CAST OF IMPRINT MADE IN PUTTY WITHOUT CONTACT BY THE MEDIUM EUSAPIA PALADINO.

PLATE V. EUSAPIA PALADINO, SHOWING RESEMBLANCE TO THE IMPRINT IN PUTTY.

and even with violence. At the moment of the production of the phenomenon a convulsive trembling shook her whole body, and the pressure of her head on my temples was so intense that it hurt me.

At the moment when the strongest convulsion took place, she cried, "*Ah, che dura!*" ("Oh, how severe!") We at once lighted a candle and found a print, rather poor in comparison with those which other experimenters have obtained, — a thing due, perhaps, to the bad quality of the clay which I used. This clay was placed about twenty inches to the right of the medium, while her head was inclined to the left. Her face was not at all soiled by the clay, which was yet so moist as to leave traces upon the fingers when touched. Moreover, the contact of her head with mine made me suffer so much that I am absolutely sure it was not intermitted for a single moment. Eusapia was very happy when she saw a verification made under conditions in which it was impossible to suspect her good faith.

I then took the tray of clay, and we passed into the dining-room in order to better examine the imprint, which I placed on a large table near a big kerosene lamp. Eusapia, who had fallen into a trance, remained for some moments standing, her hands resting upon the table, motionless and as if unconscious. I did not lose sight of her, and she looked at me without seeing anything. Then, with an uncertain step, she moved backward toward the door and passed slowly into the chamber which we had just left. We followed her, observing her all the while, and leaving the clay behind upon the table. We had already got into the chamber when, leaning against one of the halves of the double door, she fixed her eyes upon the tray of clay which had been left upon the table. The medium was in a very good light: we were separated from her by a distance of from six to ten feet, and we perceived distinctly all the details. All of a sudden Eusapia stretched her hand out abruptly toward the clay, then sank down uttering a groan. We rushed precipitately towards the table and saw, side by side with the imprint of the head, a new imprint, very marked, of a hand which had been thus produced under the very light of the lamp, and which resembled the hand of Eusapia. I have,

myself, obtained head prints a dozen times, but always rather poor, owing to the quality of the clay, and often broken while the experiment was going on.

The Chevalier Chiaia, of Naples, who first obtained these fantastic pictures through the agency of Eusapia, wrote as follows, in this connection, to Count de Rochas:

I have imprints in boxes of clay weighing anywhere between fifty-five and sixty-five pounds. I mention the weight in order to let you see the impossibility of lifting and transporting *with one hand alone* so heavy a tray, even upon the supposition that Eusapia might, unknown to us, free one of her hands. In almost every case, in fact, this tray, placed upon a chair *three feet behind the medium,* was brought forward and placed very gently upon the table about which we were seated. The transfer was made with such nicety that the persons who formed the chain and held firmly the hands of Eusapia did not hear the least noise, did not perceive the least rustling. We were forewarned of the arrival of the tray upon the table by seven taps, which, according to our conventional arrangement, John struck in the wall to inform us that we could turn on the light. I did so at once by turning the cock of the gas-fixture which was suspended above the table. (We had never completely extinguished it.) We then found the tray upon the table, and, upon the clay, the imprint which we supposed must have been made before its transfer, and while it was behind Eusapia, in the cabinet where John usually materializes and manifests himself.

The totality of these observations (which are very numerous) leads us to the thought that, in spite of the improbability of the thing, these imprints are produced at a distance by the medium.

However, some days after the séance at Montfort-l'Amaury I wrote as follows:

These different manifestations are not to me equally authentic. I am not sure of all of them, for the phenomena

were not all produced under the same conditions of certainty. I should wish to class the facts in the following order of decreasing certainty:

1. Levitations of the table.
2. Movements of the round table without contact.
3. Mallet blows.
4. Movements of the curtain.
5. Opaque silhouette passing before the red lamp.
6. Sensation of a beard upon the back of the hand.
7. Touchings.
8. Snatching of the block of paper.
9. Throwing of the lead-pencil.
10. Transference of the round table to the top of the other table.
11. Music from the little box.
12. Transfer of the guitar to a point above the head.
13. Imprints of a hand and of a face.

The first four events, having taken place in full light, are incontestable. I should put almost in the same rank Nos. 5 and 6. No. 7 may perhaps be due very often to fraud. The last in the list, having been produced toward the end of the séance, at a time when attention was necessarily relaxed, and being still more extraordinary than all the others, I confess that I cannot admit it with certainty, although I can not understand how it could have been due to fraud. The four others seem genuine; but I should like to observe them anew; a man could wager ninety-nine to one hundred that they are true. I was absolutely sure of them during the séance. But the vividness of the impressions grows weak, and we have a tendency to listen only to the voice of plain common sense,— the most reasonable and the most deceptive of our faculties.

The first impression we get upon the reading of these reports is that these different manifestations are rather vulgar, altogether banal, and do not tell us anything about the other world — or about other worlds. Surely it does not seem probable that any *spiritual being* would take part in such performances. For these phenomena are of an absolutely material class.

On the other hand, however, it is impossible not to recognize the existence of unknown forces. The simple fact, for example, of the levitation of a table to a height of six and one-half, eight, sixteen inches from the floor is not banal at all. It seems to me, speaking for myself alone, so extraordinary that my opinion is very well expressed when I say that I do not dare to admit it without having seen it myself, with my own eyes: I mean that which is called seeing, in full light and under such conditions that it would be impossible to suspect. While we are very sure that we have proved it, we are at the same time sure that in such experiments there emanates from the human body a force that may be compared with the magnetism of the loadstone, able to act upon wood, upon matter (somewhat as the loadstone acts upon iron), and counterbalancing for some moments the action of gravity. From the scientific point of view, that is a weighty fact in itself. I am absolutely certain that the medium did not lift that weight of fifteen pounds either by her hands or by her legs, or by her feet, and, furthermore, no one of the company was able to do it. The table was lifted by its upper surface. We are, therefore, certainly in the presence of an unknown force here which emanates from the persons present, and above all from the medium.

A rather curious observation ought to be made here. Several times during the course of this séance, and during the levitation of the table, I said, "There is no spirit." Every time I said this two violent blows of protestation were struck in the table. I have already remarked that, generally, we are supposed to admit the Spiritualistic hypothesis and to ask a spirit to exert himself in order that we may obtain the phenomena. We have here a psychological matter not without importance. Still, it does not seem to me, for all that, to prove the real existence of spirits, for it might

happen that this idea was necessary to the concentration of the forces present and had a purely subjective value. Religious zealots who believe in the efficacy of prayer are the dupes of their own imagination; and yet no one can doubt that certain of these petitions appear to have been granted by a beneficent deity. The Italian or Spanish girl who goes to beg of the Virgin Mary that she will punish her lover for an infidelity may be sincere, and never suspects the strangeness of her request. In dreams we all converse every night with imaginary beings. But there is something more here: the medium really duplicates herself.

I take the point of view solely of the physicist whose business is to observe, and I say, whatever may be the explanatory hypothesis you may adopt, there exists an invisible force derived from the organism of the medium, and having the power to emerge from him and to act outside of him.

That is the fact: what is the best hypothesis to explain it? 1. Is it the medium who herself acts, in an unconscious manner, by means of an invisible force emanating from her? 2. Is it an intelligent cause apart from her, a soul that has already lived upon this earth, who draws from the medium a force which it needs in order to act? 3. Is it another kind of invisible beings? Nothing authorizes us to affirm that there may not exist, side by side with us, living, invisible forces. There you have three very different hypotheses, none of which seems to me, as far as my personal experience goes, to be as yet conclusively proved.

But there certainly emanates from the medium an invisible force; and the participants, by forming the psychic chain and by uniting their sympathetic wills, increase this force. This force is not immaterial. It may be a substance, an agent emitting radiations of wave-lengths which make no impression on our retina, and which are nevertheless very powerful. In the absence of light rays it is able

to condense itself, take shape, affect even a certain resemblance to the human body, to act as do our organs, to violently strike a table, or touch us.

It acts as if it were an independent being. But this independence does not really exist; for this transitory being is intimately connected with the organism of the medium, and its apparent existence ceases when the conditions of its production themselves cease.

While writing these monstrous scientific heresies, I feel very deeply that it is difficult to accept them. Still, after all, who can trace the limits of science? We have all learned, especially during the last quarter of a century, that our knowledge is not a very colossal affair, and that, apart from astronomy, there is as yet no exact science founded upon absolute principles. And then, when all is said, there are the *facts* to be explained. Doubtless it is easier to deny them. But it is not decent or civil. He who has merely failed to find what satisfies him has no right to deny. The best he can do is simply to say, " I know nothing about it."

The fact is that, as yet, we have not elementary data enough to enable us to characterize these forces; but we ought not to lay the blame upon those who study them.

To sum up, I believe that I am able to go a little farther than M. Schiaparelli and affirm the certain existence of unknown forces capable of moving matter and of counterbalancing the action of gravity. There is a complex totality, as yet difficult to disentangle, of psychic and physical forces. But such facts, however extravagant they may appear, are worthy of coming within the sphere of scientific observation. It is even probable that they tend powerfully to elucidate the problem (a matter of supreme importance to us) of the nature of the human soul.

After the end of that séance of the 27th of July, 1897, as I desired to see again the levitation of a table in full

PHOTOGRAPH OF THE TABLE RESTING ON THE FLOOR.

PHOTOGRAPH OF THE SAME TABLE RAISED TO A HEIGHT OF TWENTY-FIVE CENTIMETRES. MADE BY M. G. DE FONTENAY.

light, the chain was formed *standing,* the hands lightly placed upon the table. The latter began to oscillate, then rose up to a height of nine inches from the floor, remained there several seconds (all the participators remaining on their feet), and fell heavily back again.*

M. G. de Fontenay succeeded in getting several photographs by the magnesium light. I reproduce two of them here (Pl. VI.). There are five experimenters who are, from left to right, M. Blech, Mme. Z. Blech, Eusapia, myself, Mlle. Blech. In the first photograph the table rests upon the floor. In the second it floats in air, coming up as high as the arms, at a height of about ten inches on the left and eight inches on the right. I hold my right foot resting upon Eusapia's feet and my right hand upon her knees. With my left hand I hold her left hand. The hands of all the others are upon the table. It is therefore altogether impossible for her to employ any muscular action. This photographic record confirms that of Pl. I., and it seems to me difficult not to recognize its undeniable documentary value.†

After this séance my most ardent desire was to see the same experiments reproduced at my own house. In spite of all the care I took with my observations, several objections can be taken to the absolute certainty of the phenomena. The most important arises from the existence of the little dark cabinet. Personally, I was sure of the perfect probity of the honorable Blech family, and I am unable to accept the idea of any trickery whatever on the part of any of its members. But the opinion of readers of the formal report may

* The reports of the sittings at Montfort-l'Amaury form the subject of a remarkable work by M. Guillaume de Fontenay, *Apropos of Eusapia Paladino*, one vol., 8vo. illustrated, Paris, 1898.

† The respective places of the persons were not always those of the photographs. Thus, at the time of the production of the imprint, M. G. de Fontenay was at the right of Eusapia, and M. Blech at the same end of the table.

not be so well assured. It was not *impossible* that, even unknown to the members of the family, some one, with the connivance of the medium, glided into the room, favored by the dim light, and produced the phenomena. An accomplice entirely clothed in black and walking barefoot would have been able to hold the instruments up in the air, put them in movement, make the touches, and cause the black mask to move at the end of a rod, etc.

This objection could be verified or quashed by renewing the experiments at my house, in a room of my own, where I should be absolutely certain that no confederate could enter. I should myself arrange the curtain, I should place the chairs, I should be certain that Eusapia would come alone to my apartments, she would be asked to undress and dress in the presence of two lady examiners, and every supposition of fraud alien to her proper personality would thus be annihilated.

At this epoch (1898) I was preparing, for *l'Annales politiques et litteraires,* some articles upon psychic phenomena, which, revised and amplified, afterwards formed my work, *The Unknown.* The eminent and sympathetic editor of the review showed himself assiduous in examining with me the best means of realizing this scheme of personal experiences. Upon our invitation, Eusapia came to Paris to pass the month of November, 1898, and to devote eight soirées especially to us — namely, the 10th, 12th, 14th, 16th, 19th, 21st, 25th, and 28th of November. We had invited several friends to be present. Each one of these séances was the subject of a formal report by several of those who were present, notably by MM. Charles Richet, A. de Rochas, Victorien Sardou, Jules Claretie, Adolphe Brisson, Réne Baschet, Arthur Lévy, Gustave Le Bon, Jules Bois, Gaston Méry, G. Delanne, G. de Fontenay, G. Armelin, André Bloch, etc.

We met in my salon in the avenue de l'Observatoire, in Paris. There were no special arrangements, except the stretching of two curtains in one corner, before the angle of two walls, thus forming a kind of triangular cabinet, the walls about which are there unbroken, without door or window. The front of the cabinet was closed by these two curtains, reaching from the ceiling to the floor and meeting in the middle.

It is before this kind of cabinet that the reader will please imagine the medium to be seated, with a white wooden table (kitchen table) before her.

Behind the curtain, upon the plinth of the projection of a bookcase and upon a table, we placed a guitar, also a violin, a tambourine, an accordion, a music-box, cushions, and several small objects, which were to be shaken, seized, thrown about by the unknown force.

The first result of these séances in Paris, at my house, was absolutely to establish the fact that the hypothesis of a confederate is inadmissible and ought to be entirely eliminated. Eusapia acts alone.

The fifth séance led me, moreover, to think that the phenomena take place (at least a certain number) when the hands of Eusapia are closely held by two controllers, that it is not generally with her hands that she acts, in spite of certain possible trickeries; for it would be necessary to admit (an abominable heresy!) that a third hand could be formed in organic connection with her body!

Before every séance Eusapia was undressed and dressed again in the presence of two ladies charged with seeing that she did not hide any tricking apparatus under her clothes.

It would be a little long to go thoroughly into the details of these eight sittings, and it would be partly to go over what has already been described and commented upon in the first chapter, as well as in the preceding pages. But it will

not be uninteresting to give here the estimate of several of the sitters, by reproducing some of the reports.

I will begin with that of M. Arthur Lévy, because he describes very fully the installation, the impression produced upon him by a medium, and the greater part of the facts observed.

Report of M. Arthur Lévy

(Séance of November 16)

That which I am going to relate I saw yesterday at your house. I saw it with distrust, closely observing all that might have resembled trickery; and, after I had seen it, I found it so far beyond the things that we are accustomed to conceive that I still ask myself if I really saw it. Yet I must confess that I have not been dreaming.

When I arrived at your salon, I found the furniture and all the other arrangements as usual. On entering, only a single change could be remarked at the left, where two thick curtains of gray and green rep concealed a little corner. Eusapia was to perform her wonders before this kind of alcove. This was the mysterious corner: I examined it very minutely. It had in it a little round uncovered table, a tambourine, a violin, an accordion, castanets, and one or two cushions. After this precautionary visit, I was certain that in this place at least there was no preparation, and that no communication with the outside was possible.

I hasten to say that from this moment up to the end of the experiments we did not leave the room for a single minute, and that, so to speak, we had our eyes constantly fixed upon this corner, the curtains of which, however, were always partly open.

Some moments after my examination of the cabinet Eusapia arrives,— the famous Eusapia. As almost always happens, she looks quite different from what I had anticipated. Where I had expected to see — I do not well know why, indeed — a tall thin woman with a fixed look, piercing eyes, with bony hands, and abrupt movements, agitated by nerves

incessantly trembling under perpetual tension, I find a woman in the forties, rather plump, with a tranquil air, soft hand, simple in her manners, and slightly shrinking. Altogether, she has the air of an excellent woman of the people. Yet two things arrest the attention when you look at her. First, her large eyes, filled with strange fire, sparkle in their orbits, or, again, seem filled with swift gleams of phosphorescent fire, sometimes bluish, sometimes golden. If I did not fear that the metaphor was too easy when it concerns a Neapolitan woman, I should say that her eyes appear like the glowing lava fires of Vesuvius, seen from a distance in a dark night.

The other peculiarity is a mouth with strange contours. We do not know whether it expresses amusement, suffering, or scorn. These peculiarities impress themselves on the mind almost simultaneously, without our knowing on which one to fix the attention. Perhaps we should find in these features of her face an indication of forces which are acting in her, and of which she is not altogether the mistress.

She takes a seat, enters into all the commonplaces of the conversation, speaking in a gentle, melodious voice, like many women of her country. She uses a language difficult for herself and not less difficult for others, for it is neither French nor Italian. She makes painful efforts to make herself understood, and sometimes does this by mimicry (or sign-language) and by willing to obtain that which she wants. However, a persistent irritation of the throat, like a pressure of blood returning at short intervals, forces her to cough, to ask for water. I confess that these paroxysms, in which her face became deeply flushed, caused me great anxiety. Were we going to have the inevitable indisposition of the rare tenor, on the day when he was to be heard on the stage? Happily, nothing of the kind took place. It was rather a sign of the contrary, and seemed like a forerunner of the extreme excitement which was going to take possession of her on that evening. In fact, it is very remarkable that from the moment when she put herself — how shall I say it? — in condition for work, the cough, the irritation of the throat, completely disappeared.

When her fingers were placed on black wool,— to be frank,

upon the trousers cloth of one of the company,— Eusapia called our attention to the kind of diaphanous marks made upon them (the fingers), a distorted, elongated second contour. She tells us that that is a sign that she is going to be given great power to-day.

While we are talking some one puts a letter-weigher on the table. Putting her hands down on each side of the letter-weigher, and at a distance of four inches, she causes the needle to move to No. 35 engraved on the dial plate of the weigher. Eusapia herself asked us to convince ourselves, by inspection, that she did *not* have a hair leading from one hand to the other, and with which she could fraudulently press upon the tray of the letter-weigher. This little by-play took place when all the lamps of the salon were fully lighted. Then commenced the main series of experiments.

We sit around a rectangular table of white wood, the common kitchen table. There are six of us. Close to the curtains, at one of the narrow ends of the table, sits Eusapia; at her left, also near the curtains, is M. Georges Mathieu, an agricultural engineer at the observatory in Juvisy; next comes my wife; M. Flammarion is at the other end, facing Eusapia; then Mme. Flammarion; finally myself. I am thus placed at the right hand of Eusapia, and also against the curtain. M. Mathieu and myself each hold a hand of the medium resting upon his knee, and, furthermore, Eusapia places one of her feet upon ours. Consequently, no movements of her legs or arms can escape our attention. Note well, therefore, that this woman has the use only of her head and of her bust, which latter is of course without the use of the arms, and is in absolute contact with our shoulders.

We rest our hands on the table. In a few moments it begins to oscillate, stands on one foot, strikes the floor, rears up, rises wholly into the air,— sometimes twelve inches, sometimes eight inches, from the ground. Eusapia utters a sharp cry, resembling a cry of joy, of deliverance; the curtain behind her swells out, and, all inflated as it is, comes forward upon the table. Other raps are heard in the table, and simultaneously in the floor at a distance of about ten feet from us. All this in full light.

Already excited, Eusapia asks in a supplicating voice and broken words that we lessen the lights. She cannot endure the dazzling glare in her eyes. She affirms that she is tortured, wants us to hurry; "for," she adds, "you shall see fine things." After one of us has placed the lamp on the floor behind the piano, in the corner opposite the place where we are (at a distance of about twenty-three feet), Eusapia no longer sees the light and is satisfied; but we can distinguish faces and hands. Let it not be forgotten that M. Mathieu and I each have a foot of the medium on ours, and that we are holding her hands and knees, that we are pressing against her shoulders.

The table is always shaking and makes sudden jolts. Eusapia calls to us to look. Above her head appears a hand. It is a small hand, like that of a little girl of fifteen years, the palm forward, the fingers joined, the thumb projecting. The color of this hand is livid; its form is not rigid, nor is it fluid; one would say rather that it is the hand of a big doll stuffed with bran.

When the hand moves back from the brighter light, as it disappears,— is it an optical illusion?— it seems to lose its shape, as if the fingers were being broken, beginning with the thumb.

M. Mathieu is violently pushed by a force acting from behind the curtain. A strong hand presses against him, he says. His chair is also pushed. Something pulls his hair. While he is complaining of the violence used upon him, we hear the sound of the tambourine, which is then quickly thrown upon the table. Next the violin arrives in the same manner, and we hear its strings sound. I seize the tambourine and ask the Invisible if he wishes to take it. I feel a hand grasping the instrument. I am not willing to let it go. A struggle now ensues between myself and a force which I judge to be considerable. In the tussle a violent effort pushes the tambourine into my hand, and the cymbals penetrate the flesh. I feel a sharp pang, and a good deal of blood flows. I let go of the handle. I just now ascertain, by the light, that I have a deep gash under the right thumb nearly an inch long. The table continues to shake, to strike the floor with redoubled strokes, and the ac-

cordion is thrown upon the table. I seize it by its lower half and ask the Invisible if he can pull it out by the other end so as to make it play. The curtain comes forward, and the bellows of the accordion is methodically moved back and forth, its keys are touched, and several different notes are heard.

Eusapia utters repeated cries, a kind of rattling in the throat. She writhes nervously, and, as if she were calling for help, cries, "*La catena! la catena!*" ("The chain! the chain!"). We thereupon form the chain by taking hold of hands. Then, just as if she was defying some monster, she turns, with inflamed looks, toward an enormous divan, which thereupon *marches up to us.* She looks at it with a satanic smile. Finally she blows upon the divan, which goes immediately back to its place.

Eusapia, faint and depressed, remains relatively calm. Yet she is dejected; her breast heaves violently; she lays her head on my shoulder.

M. Mathieu, tired of the blows which he is constantly receiving, asks to change places with some one. I agree to this. He changes with Mme. F., who then sits at the right of Eusapia, while I am at her left. Mme. F. and I never cease to hold the feet, hands, and knees of the medium. M. F. sets a water bottle and a glass in the middle of the table. The latter's brisk, jolting movements overturn the water bottle, and the water is spilled over its surface. The medium imperatively requires that the liquid be wiped up; the water upon the table blinds her, tortures, paralyzes her, she says. M. F. asks the Invisible if he can pour water into the glass. After some moments the curtain advances, the carafe is grasped, and the glass seems to be half full. That takes place several different times.

Mme. F., being no longer able to endure the blows given her through the curtain, exchanges seats with her husband.

I put my repeating watch upon the table. I ask the Invisible if he can sound the alarm. (The mechanism of the alarm is very difficult to understand, delicate to operate, even for me, doing it every day. It is formed by a little tube cut in two, one half of which glides smoothly over the other. In reality, there is only a projection of one-fiftieth of an

inch of thickness of tube, upon which it is necessary to press with the finger-nail and give quite a push in order to start up the alarm.) In a moment the watch is taken by the "spirit." We hear the stem-winder turning. The watch comes back upon the table without having been sounded.

Another request is made for the alarm to sound. The watch is again taken; the case is heard to open and shut. (Now I cannot open this case with my hands: I have to pry it open with a tool like a lever.) The watch comes back once more without having sounded.

I confess that I experienced a disenchantment. I felt that I was going to doubt the extent of the occult power, which had, nevertheless, manifested itself very clearly. Why could it not sound the alarm of this watch? In making my request, had I overstepped the limits of its powers? Was I going to be the cause of all the well-proved phenomena of which we have had testimony losing the half of their value? I said aloud:

"Am I to show how the alarm is operated?"

"No, no!" Eusapia warmly replies, "it will do it."

I will note here that at the moment when I proposed to point out the mechanism, there passed through my mind the method of pressing upon the little tube. Immediately the watch was brought back to the table; and, very distinctly, three separate times, we heard it sound a quarter to eleven.

Eusapia was evidently very tired; her burning hands seemed to contract or shrivel; she gasped aloud with heaving breast, her foot kept quitting mine every moment, scraping the floor and tediously rubbing along it back and forth. She uttered hoarse panting cries, shrugging up her shoulders and sneering; the sofa came forward when she looked at it, then recoiled before her breath; all the instruments were thrown pell-mell upon the table; the tambourine rose almost to the height of the ceiling; the cushions took part in the sport, overturning everything on the table; M. M. was thrown from his chair. This chair — a heavy dining-room chair of black walnut, with stuffed seat — rose into the air, came up on the table with a great clatter, then was pushed off.

Eusapia seems shrunken together and is very much af-

fected. We pity her. We ask her to stop. "No, no!" she cries. She rises, we with her; the table leaves the floor, rises to a height of twenty-four inches, then comes clattering down.

Eusapia sinks prostrated into a chair. We sit there troubled, amazed, in consternation, with a tense and constricted feeling in the head, as if the atmosphere were charged with electricity.

With many precautions, M. F. succeeds in calming the agitation of Eusapia. After about a quarter of an hour she returns to herself. When the lamps are again lighted, she is seen to be very much changed, her eye dull, her face apparently diminished to half its usual size. In her trembling hands she feels the pricking of needles which she asks us to pull out. Little by little she completely recovers her senses. She appears to remember nothing, not to comprehend at all our expressions of wonder. All that is as foreign to her as if she had not been present at the sitting. She isn't interested in it. So far as she is concerned, it would seem as if we were speaking of things of which she had not the faintest idea.

What have we seen? mystery of mysteries!

We took every precaution not to be the dupes of complicity, of fraud. Superhuman forces acting near us, so near that we heard the very breathing of a living being,— if living being it were,— such are the things our eyes took cognizance of for two mortal hours.

And when, on looking back, doubts begin to creep into the mind, we must conclude that, given the conditions in which we were, the chicanery necessary to produce such effects would be at least as phenomenal as the effects themselves.

How shall we name the mystery?

So much for the report of M. Arthur Lévy. I have no commentary to make at present upon these reports of my fellow-experimenters. The essential thing, it seems to me, is to leave to every one his own exposition and his personal judgment. I shall proceed in the same way with the other reports which are to follow. I shall reproduce the principal

ones. In spite of some inevitable repetitions, they will surely be read with extreme interest, especially when we take into consideration the high intellectual standing of the observers.

Report of M. Adolphe Brisson.

(Séance of November 10)

(There were present at this séance, besides the hosts of the occasion, M. Prof. Richet, M. and Mme. Ad. Brisson, Mme. Fourton, M. André Bloch, M. Georges Mathieu.)

The following are occurrences which I personally observed with the greatest care. I did not once cease to hold in my right hand the left hand of Eusapia or fail to feel that we were in contact. The contact was only interrupted twice,— at the moment when Dr. Richet felt a pricking in his arm. Eusapia's hand, making violent movements, escaped from my grasp; but I seized it again after two or three seconds.

1. After this sitting had begun,— that is, at the end of about ten minutes,— the table was lifted up away from Eusapia, two of its legs leaving the floor simultaneously.

2. Five minutes later the curtain swelled out as if it had been inflated by a strong breeze. My hand, never letting go of that of Eusapia, pressed gently against the curtain, and I experienced a resistance, just as if I had pressed against the sail of a ship bellied out by the wind.

3. Not only was the curtain puffed out, forming a big pocket, but the perpendicular edge of the curtain that touched the window moved automatically aside and drew back as if it were pushed by an invisible curtain holder, making nearly this kind of a movement.

4. The curtain, inflated anew, took the form of a nose or of an eagle's beak, projecting above the table about eight or ten inches. This shape was visible for several seconds.

5. We heard behind the curtain the noise of a chair rolling over the floor; by a first push it arrived as far as I was; a second push turned it upside down, its feet in the air, in

the position shown.

It was a heavy stuffed chair. Succeeding pushes moved it again, lifted it up, and made it turn somersaults; it finally came to a standstill almost in the place where it had fallen over.

6. We heard the noise of two or three objects falling to the floor (I mean objects behind the curtain upon the centre-table). The curtain parted in the middle, and in the dim light the little violin appeared. Sustained in the air by an invisible hand, it came gently forward above our table, whence it settled down upon my hand and upon that of my neighbor on the left.*

On two separate occasions the violin rose from the table and at once fell back again, making a vigorous leap, like a fish flopping upon the sand. Then it glided down to the floor, where it remained motionless until the end of the sitting.

7. A new rolling noise was heard behind the curtain. This time it was the centre-table. A preliminary effort, quite vigorous, enabled it to rise half-way to the top of our table. By a second effort it got clear on top and rested upon my fore-arm.

8. Several times I distinctly felt light blows upon my right side, as if made with the point of a sharp instrument. But the truth compels me to declare that these blows were no longer given after Eusapia's feet were held under the table by M. Bloch. I note this correlation of things without drawing from it any presumption against Eusapia's loyalty. I have so much the less reason to suspect her in that her left foot did not leave my right foot during the whole sitting.

* In the following sitting, of November 12, M. Antoniadi writes (with an excellent corroborative sketch): "Phenomenon observed with absolute certainty; the violin was thrown upon the table, twenty inches above the head of Eusapia."

Report of M. Victorien Sardou

(Séance of November 19)

(There were present at this séance, besides the hosts of the evening, M. V. Sardou, M. and Mme. Brisson, M. A. de Rochas, M. Prof. Richet, M. G. de Fontenay, M. Gaston Méry, Mme. Fourton, M. and Mlle. des Varennes).

I shall only relate here phenomena controlled by myself personally in the séance of last Saturday. Consequently, I say nothing of the arrangement of the apartment, of the experimenters, nor of the events which were first produced in the dark and which all the participants were able to authenticate,— such as cracking sounds in the table, levitations, displacements of the table, raps, etc., as well as the blowing out of the curtain over the table, the bringing on of the violin, of the tambourine, and so forth.

Eusapia having invited me to take the place at her side which had been vacated by M. Brisson, I sat down on her left, while you preserved your place on her right. I took her left hand in my right hand, while my left hand placed upon the table was in contact with that of my neighbor, the medium insisting on this several times in order that the chain might not be broken. Her left foot rested upon my right foot. All through the experiment I never let go her hand for a single second. She grasped my hand with a strong pressure, and it followed her through all her movements. In the same way her foot always kept in contact with mine. My foot always kept touch with hers in all her foot scrapings on the floor, her shiftings of place, shrinkings, twitchings, etc., which never had anything suspicious in them, nor were they of such a nature as to explain the events which took place at my side, behind me, around me, and upon me.

In the first place, and in less than a minute after I had been placed on the left of the medium, the curtain nearest to me was puffed out and brushed against me, as if impelled by a gust of wind. Then three times I felt upon my right side a pressure which lasted but for a moment, yet was very marked. At that moment we were in a very dim light, yet

enough to make the faces and the hands of all who were present distinctly visible. After Eusapia's violent nervous contractions, struggles, and energetic pushes (precisely like those which I had seen in similar cases elsewhere and which only astonish those who have slightly studied these phenomena), suddenly the curtain nearest to me was blown forward with an astonishing propulsive power between Eusapia and me, in the direction of the table, entirely concealing from me the face of the medium; and the violin, which, with the tambourine, had, before my introduction, been replaced in the dark chamber, was hurled to the middle of the table, as if by an invisible arm. To accomplish this, the arm must have lifted the curtain and drawn it along with it.

After this the curtain returned to its first position, but not completely; for it still remained puffed out a little between Eusapia and me, one of its folds remaining upon the edge of the table at my side.

Then you took the violin and held it out at such a distance from the two curtains that it was wholly visible to the company; and you invited the occult agent to take it.

This was done, the mysterious agent taking it back with him into the dark closet, with as much good will as he had shown in bringing it on.

The violin then fell upon the floor behind the curtains, or portières. One of these which was nearest to me resumed its vertical position, and for a time I heard upon my right upon the floor behind the curtains a kind of scrimmage between the violin and the tambourine, which were displaced, pulled about, and lifted, clashing and resounding at a great rate; and yet it was impossible to attribute any of these manifestations to Eusapia, whose foot never moved, but remained firmly pressed against my own.

A little after, I felt against my right leg, behind the curtain, the rubbing of a hard body which was trying to climb upon me, and I thought it was the violin. And so it was, in fact; and, after an unsuccessful effort to climb higher than my knee, this apparently living creature fell with a bang upon the floor.

Almost immediately I felt a new pressure upon my right

hip, and mentioned the circumstance. You disengaged your left hand from the chain, and, turning toward me, twice made in the air the gesture of the director of an orchestra moving his bâton to and fro. And each time, with perfect precision, I felt upon my side the repercussion of a blow exactly tallying your gesture, which reached me after the delay of a second more or less, and which seemed to me to correspond exactly to the time necessary for the transference of a billiard ball or a tennis ball from you to me.

Some one, Dr. Richet, I believe, having spoken at that time of strokes upon the shoulders of the sitters in which the action and shape of a human hand was very marked, I will mention as a proof of his remark that I received in succession three blows upon the left shoulder (that is to say, the one most distant from the curtain and from the medium), more violent than the preceding ones; and this time the heavy pressure of the five fingers was very evident. Then a last blow with the flat of the hand, applied in the small of the back, without hurting me at all, was strong enough to make me lean forward, in spite of myself, toward the table.

Some moments after, my chair, moving under me, glided over the floor, and was shifted in such a way as to leave my back turned a little in the direction of the dark closet.

I leave to other witnesses the task of telling the results of their personal observations,— how, for example, the violin, having been picked up by you from the floor and replaced upon the table, was held out by Mme. Brisson, as you had already done, and lifted up in the same way in the sight of all, while I held the left hand of Eusapia, you her right hand, and with the hand which remained free you pressed the wrist of her left hand.

Nor do I say anything of a hand-pressure through the opening in the curtain, having seen nothing of this myself.

But that which I did see very well indeed was the sudden appearance of three very vivid little lights between my neighbor and myself. They were promptly extinguished and seemed like a kind of will-o'-the-wisp, similar to electric sparks coming and going with great rapidity.

In short, I can only repeat here what I have said during

the course of these experiments, "If I had not been convinced forty years ago, I should be this evening."

Report of M. Jules Claretie.

(Séance of November 25)

(There were present at this sitting, in addition to the hosts of the occasion, M. Jules Claretie and his son, M. Brisson, M. Louis Vignon, Mme. Fourton, Mme. Gagneur, M. G. Delanne, M. René Baschet, M. and Mme. Basilewska, M. Mairet, photographer.)

I note only the impressions I received after the moment when Eusapia, who had taken my hand at the time when M. Brisson was still seated by her, asked me to replace him. I am certain that I did not let go of Eusapia's hand during all the experiments. Every moment I felt the pressure of her foot upon mine, the heel being especially perceptible. I do not believe that I relaxed my fingers for a moment, nor released the hand that I held. I was struck with the throbbing of the arteries at the end of Eusapia's fingers: the blood bounded feverishly through them.

I sat next the curtain. It goes without saying that it was drawn from right to left or from left to right just as it happened. That which I can't understand is that it could swell out until it floated over the table like a sail inflated by the wind.

I felt at first a little light blow on my right side. Then, *through the curtain,* two fingers seized me and pinched my cheek. The pressure of the two fingers was evident. A blow more violent than the first hit me on the right shoulder, as if it came from a hard, square body. My chair was twice moved and turned, first backward, then forward.

Those two fingers which pinched my cheek I had already felt — before I took my place at Eusapia's side — when I was holding over against the curtain the little white book which M. Flammarion had given me. This book was seized by *two naked fingers* (I say naked, because the folds of the curtain did not cover them) and then disappeared. I did not see these fingers: I touched them, or they touched me, if

you will. My son held out and handed over also a leather cigar-holder, which was grabbed in the same way.

One of the persons present saw a rather heavy little music-box disappear in the same way.

With hardly a moment's delay the box was removed from our side with some violence; and I can speak with the more feeling of the force of the projection and of the weight of the object, because it struck me under the eye, and this morning I still have upon my face the only too visible mark of it, and feel the pain of it. I don't understand how a woman seated by my side could have the strength to throw with such force a box which, so to speak, should have come from quite a distance.

I observe, however, that all the phenomena are produced on the same side of the curtain; namely, behind it, or through it, if you will. I saw leafy branches fall upon the table, but they came from the side of the said curtain. Some persons assert that they saw a green twig come in through the open window which gives upon Cassini Street. But I did not see that.

There was a little round table behind the curtain, very near me. Eusapia takes my hand and places it, held in hers, upon the round table. I feel this table shaking, moving. At a given moment I believe that I perceive two hands near by and upon mine. I am not deceived; but this second hand is that of M. Flammarion, who, on his side, is holding the hand of the medium. The round table bestirs itself. It leaves the floor, it rises. I have the feeling of this at once. Then, the curtain having lifted and, as it were, spread itself over the table, I can distinctly see what passes behind it. The round table moves; it rises; it falls.

Suddenly tipping partly over, it rises and comes toward me, upon me. It is no longer vertical, but is caught between the table and me in a horizontal position. It comes with sufficient force to make me recoil, draw in my shoulders, and try to push back my chair to let this moving piece of furniture pass. It seems, like a living thing, to struggle between the table and me. Or, again, it seems like an animated being struggling against an obstacle, desiring to pass or move on and not being able to do so, being stopped by the

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that we can comprehend that we must first try natural explanations.

1. It is impossible that it could have been Eusapia. I was holding one of her hands and *was looking at the other arm,* and I placed my cigarette-holder in such a position that, *even with her two arms free,* she would not have been able to accomplish such a marvellous thing.

2. It is not probable that it could have been an accomplice; but is it not possible that the unconscious mind of Eusapia suggested to the unconscious mind of a person near the curtain to pass a hand behind it and operate there? Everybody would be acting in good faith and would have been deceived by the unconscious element. This important point ought to be verified, for no experiment would be so valuable if it were once *demonstrated.*

Could not Eusapia's departure be put off? We shall not have a similar opportunity, and we surely ought to clear up that phenomenon of the hand.

It is very evident that the table was lifted; but that is a material phenomenon which one can readily grant. The hand which came to seize my cigarette-holder performed an act of the will implying an intelligence, but the other is nothing of the kind. Eusapia might lift a table to the height of three feet without my scientific conception of the world being changed by it; but to bring in the intervention of a spirit, that would be to prove the existence of spirits, and you see the consequences.

As for the hand which seized the cigarette-case, it is absolutely certain that it was not that of Eusapia (you know that I am very sceptical and that I was looking about me); but close to the curtain, in the salon, there were a good many people, and several times you heard me ask people to stand aside from the curtain. If we two had been able to study Eusapia *absolutely alone,* in a room to which we had the key, the problem would soon be solved.

I have not been able to make this verification, the sitting at which Dr. Le Bon was present having been the last which Eusapia had consented to give at my house. But his objec-

tion is of no value. I am absolutely certain that nobody glided behind the curtain, neither in this particular case nor in any other. My wife, also, particularly occupied herself in observing what took place in that part of the room and never was able to discover anything suspicious. There is only one hypothesis; that is, that Eusapia herself handled the objects. Since Dr. Le Bon declares that the thing was impossible, he himself personally inspecting it, we are compelled to admit the existence of an unknown psychic force.*

Report of M. Armelin

(*Séance of November 21*)

(For this sitting I had asked three members of the Astronomical Society of France to exercise the severest control possible; namely, M. Antoniadi, my assistant astronomer at the observatory of Juvisy, M. Mathieu, agricultural engineer at the same observatory, and M. Armelin, secretary of the Astronomical Society. The last-named gentleman sent me the following report. There were also present M. and Mme. Brisson, M. Baschet, M. Jules Bois, Mme. Fourton, Mme. La Comtesse de Labadye.)

At quarter of ten Eusapia takes her seat, her back to the place where the two curtains meet, her hands resting upon the table. At the invitation of M. Flammarion, M. Mathieu takes his seat at her right, charged with the duty of keeping constant watch upon her left hand, and M. Antoniadi is enjoined to do the same for her right hand. They also make

* During the correction of the proofs of these sheets (Oct., 1906), I received from Dr. Gustave Le Bon the following note:

"At the time of her last sojourn in Paris (1906), I was able to obtain from Eusapia three séances at my house. I besought one of the keenest observers that I know, M. Dastre,— a member of the Academy of Science and professor of physiology at the Sorbonne,— to be kind enough to be present at our experiments. There were present also my assistant, M. Michaux, and the lady to whose kind offices I owe the presence of Eusapia.

"Besides the levitation of the table, we several times, and almost in full light, saw a hand appear. At first it was about two inches and a half above Eusapia's head, then at the side of the curtain which partly covered her, about twenty inches from her shoulder.

"We then organized, for the second séance, our methods of control.

themselves sure of her feet. At the right of M. Mathieu sits Mme. la Comtesse de Labadye; on the left of M. Antoniadi, Mme. Fourton. Facing Eusapia, between Mmes. de Labadye and Fourton, MM. Flammarion, Brisson, Baschet, and Jules Bois.

The gas chandelier is lighted and the full light turned on. This chandelier is almost over the table. A little lamp with a shade is placed on the floor behind an easy-chair, near the opposite side of the room, in the direction of its greatest length, and to the left of the fireplace.

At five minutes of ten the table is lifted from the side opposite to the medium and falls back with a bang.

At ten o'clock it rises from the side of the medium, who withdraws her hands, the other persons holding their hands lifted up. The same effect is produced three times. The second time, while the table is in the air, M. Antoniadi declares that he is leaning on it with all his weight and is unable to lower it. The third time, M. Mathieu leans on it in the same way and experiences the same resistance. During this time, Eusapia holds her closed fist about four inches above the table, looking as if she were strongly grasping something. The action lasts several seconds. There is no doubt whatever about this levitation. When the table falls back, Eusapia experiences something like a relaxation after a great effort.

At 10.03 the table is lifted clean off its four feet at once, at first on the side opposite to the medium, rising about eight inches; then it falls abruptly back. *While it is in the air, Eusapia calls her two neighbors to witness that they are*

They were altogether decisive. Thanks to the possibility of producing behind Eusapia an illumination which she did not suspect, we were able to see one of her arms, very skilfully withdrawn from our control, move along horizontally behind the curtain and touch the arm of M. Dastre, and another time give me a slap on the hand.

"We concluded from our observations that the phenomena observed had nothing supernatural about them.

"As to the levitation of the table,—an extremely light one, placed before Eusapia, and which her hands scarcely left,—we have not been able to formulate any decisive explanation. I will only observe that Eusapia admitted that it was impossible for her to displace the slightest one of the very light objects placed upon that table."

After writing this note, M. G. Le Bon said to me verbally that, in his opinion, everything in these experiments is fraud.

closely holding her hands and her feet, and that she is not in contact with the table.

Then light raps are heard in the table. Eusapia makes M. Antoniadi lift his hand about eight inches above the table and taps three times upon his hand with her fingers. The three taps are heard simultaneously in the table.

To prove that she is not using either her hands or her feet, she sits down sidewise upon her chair on the left, stretches out her legs, and puts her feet on the edge of the chair of M. Antoniadi: she is in full view and her hands are held. At once the curtain is shaken in the direction of M. A.

From 10.10 to 10.15, several times in succession, five raps are heard in the table. Each time the gas is turned down a little, and each time the table moves without contact.

At 10.20 it balances itself, suspended in the air, and resting upon the two legs of the longer side. Then *it rises off of its four feet to a height of eight inches.*

10.25. The curtain moves, and M. Flammarion says that there is some one behind it, that somebody is pressing his hand. He holds his hand out toward the curtain, at a distance of about four inches. The curtain is pushed out into something like a pocket made by a hand which is drawing near. The medium with nervous laugh cries, "Take it, take it." M. A. feels through the curtain the touch of a soft body, like a cushion. But the hand of M. F. is not taken. Objects are heard to move, including the bells of a tambourine.

All of a sudden the medium, leaving M. Mathieu, stretches her hand above the table toward M. Jules Bois, who takes it. At this moment, behind the curtain, an object falls to the floor with a great noise.

10.35. Eusapia, again freeing her right hand, lifts it up above her left shoulder, the fingers forward, at a distance of several inches from the curtain, and beats four or five strokes in the air which are heard to sound in the tambourine. Several persons think they see a will-o'-the-wisp through the gap between the curtains.

Up to that point the gas has been gradually lowered. After the lapse of a full moment I find that I can no longer

read, but I can distinguish very clearly the horizontal lines of my writing. I can see the hour perfectly by my watch, as well as the faces of those present, (that of Eusapia especially) turned toward the light. The gas is now completely extinguished.

At 10.40, the gas being out, I can still read my watch, but with difficulty; I still see the lines of my writing, though without being able to read.

Eusapia wants somebody to hold her head, which is done. Then she asks somebody to hold her feet. M. Baschet gets down on his knees under the table and holds them.

M. Antoniadi cries, "I am touched!" and says that he has felt a hand. I have very distinctly seen the curtain puffing out. Mme. Flammarion, whom I see silhouetted on the bright glass of the window, her head leaning forward, goes behind the curtain in order to assure herself that the medium is not doing anything suspicious in the way of motions.

One of the persons present having changed places, Eusapia utters complaints: "*La catena! la catena!*" ("The chain! the chain!") The chain is re-established.

At 10.45 the curtain is inflated again. A bump is heard. The round table touches the elbow of M. Antoniadi. Mme. Flammarion, who has kept looking behind the curtain, says that she sees the round table turned over. Its feet are in the air, and it is moving to and fro. She thinks she sees glimmers of light near the floor.

M. Mathieu feels a hand and an arm pushing the curtain against him. M. Antoniadi says that he is touched by a cushion; his chair is pulled and turns under him as if on a pivot. He is touched again on the elbow by some object.

It is ascertained that M. Jules Bois is holding Eusapia's right hand above the table; M. Antoniadi assures us that he is holding her left hand, and M. Mathieu her feet.

The curtain is again shaken twice; M. Antoniadi is hit in the back very hard, he says, and a hand pulls his hair. The only light remaining is the little lamp with a shade, behind an easy-chair at the farther end of the salon. I continue to write, but my strokes take all kinds of shapes.

Suddenly, M. Antoniadi exclaims that he is enveloped by the curtain, which rests upon his shoulders. Eusapia cries, "What is this that is passing over me?" The round table comes forth beneath the curtain. Mme. Flammarion, who is standing opposite the window, and has kept looking behind the curtain, says that she sees some very white object. At the same moment M. Flammarion, Mme. Fourton, and M. Jules Bois exclaim that they have just seen a white hand between the curtains, above Eusapia's head; and, at the same moment, M. Mathieu says that his hair is being pulled. The hand we saw seemed small, like that of a woman or of a child.

"If there is a hand there," says M. Flammarion, "could it perhaps grasp an object?" M. Jules Bois holds a book out toward the middle of the right-hand curtain. The book is taken and held two seconds. Mme. Flammarion, whom I see always silhouetted upon the bright glass of the window, and who is looking behind the curtain, *cries that she has seen the book pass through.*

M. F. proposes to light up and verify. But everybody agrees in thinking that the curtain may have already changed its position. A moment afterwards the curtain is again puffed out, and M. Antoniadi says that he is hit four or five times on the shoulder. Eusapia has asked him more than ten times whether he is quite "*seguro*" (sure) that he has hold of her hand and her foot.

"Yes, yes," he replies, "*seguro, segurissimo*" ("sure, quite sure").

Mme. Fourton says that for the second time she has seen a hand stretched out and that this time it touched the shoulder of M. Antoniadi. M. Jules Bois says that for the second time he has seen a hand stretched out at the end of a small arm, the fingers moving, the palm forward. (It is impossible to decide whether these two visions were simultaneous or not.)

We are getting accustomed to the almost complete darkness; I can still read "11.15" by my watch. M. Antoniadi says his ear is pinched very hard. M. Mathieu says he is touched. M. Antoniadi feels his chair pulled: it falls to

the floor. He lifts it again and seats himself on it, and is again hit very hard on the shoulder.

About 11.20, at the request of Eusapia, M. Flammarion replaces M. Mathieu. He holds her two feet and one hand; M. Antoniadi holds the other hand. The lamp is lowered still more. The darkness is almost complete. M. Flammarion, having remarked that an unknown physical force is evidently present, but perhaps not an individual personality, feels his hand seized all of a sudden by some one (or some thing), and is interrupted. Then, a little after, he complains that his beard is being pulled (on the side opposite the medium, where I am. I did not perceive anything).

At 11.30 the lamp is turned up. It is comparatively bright in the room. The curtain, after all these movements, is seen to be more and more pushed aside, enveloping the head of Eusapia. Suddenly, above her head, we all see the tambourine slowly appear and fall upon the table with a noise like that of sheep-bells. It seems to me brighter than the feeble glimmer of the concealed lamp would justify and as if accompanied by white phosphorescent gleams; but they are perhaps flashes of light from its gilded ornaments, which, however, ought to appear yellower.

When the lamp is turned down, the noise of moving furniture is heard; the round table is fetched clear up onto the top of the large table. It is removed, and the tambourine executes a dance all alone with a peculiar sound like the ringing of bells. Mme. Fourton says that she has had her hand pressed and her fore-arm pinched.

At 11.45 the window curtain is closed in its turn; and, after a moment, we all see in the direction in which the cleft in the corner curtain ought to be, above Eusapia's head, a large white star of the color of Vega, though larger and of a softer light, and which rests motionless for some seconds, then is extinguished. Shortly after, a zigzag glimmer of light, of the same white color, runs over the right-hand curtain, tracing two or three upright lines of several inches in length, like an N very much elongated.

In spite of the fact that night has fallen, there is still sufficient light entering by the two uncurtained windows, and proceeding from the vague glimmer of the lamp behind the

easy-chair, to enable each one of us to distinguish his neighbors. Our silhouettes are outlined in the large mirror near us and above the sofa. The white collars of the men are clearly seen, their faces a little less clearly. Yet on my left I see very plainly M. Baschet, on my right Mme. Brisson, standing and holding her hand up to her face to shield the eyes. I also distinguish Mme. Flammarion, who has come and seated herself near her.

M. Flammarion feels an object gliding over his hair. He begs Mme. de Labadye to take hold of it; and a music-box falls into his hands, which, before the séance, was placed upon the ogee, in the corner concealed by the curtain. M. Brisson has taken the place at the table formerly occupied by M. Flammarion, facing Eusapia. A cushion hits him full in the face. As I am approaching the mirror, I see the reflection of this passing cushion by the comparatively bright light at the far end of the room.

M. Baschet seizes the object and rests his elbow upon it. It is snatched from him, flies over our heads, hits the mirror, falls upon the sofa, and rolls upon my foot. All this without my being able to perceive any movement on the part of the medium.

Midnight draws near. The séance is adjourned.

MM. Antoniadi and Mathieu then declare that the control with which they were charged has not been successful, and that they are not sure that they have always had hold of the medium's hands.

Report of M. Antoniadi

(*The Same Séance*)

I shall give you an exact account of the rôle I played, that I may gratify your desire to know the truth.

I restricted myself to ascertaining whether there was *a single phenomenon* which could not be explained in the most simple manner, and I arrived at the conclusion that there was not. I assure you, on my word of honor, that my watchful, silent attitude *convinced me, beyond all manner of*

doubt, that everything is fraudulent, from the beginning to the end; that there is no doubt that Eusapia shifts her hands or her feet, and that the hand or the foot that one is thought to control is never held tight or very strongly pressed at the moment of the production of the phenomena. My certain conclusion is that *nothing* is produced without the substitution of hands. I ought to add that, at first, I was very much astonished when I was hit hard in the back, from behind the curtain, while I was very clearly holding *two hands* with my right hand. Happily, however, at this moment, Mme. Flammarion having given us a little light, I saw that I held the *right* hand of Eusapia and — yours!

The substitution is made by Eusapia with extraordinary dexterity. In order to ascertain it, I was obliged to concentrate my mind upon her very slightest movements with the severest attention. But it is the first step that costs; and, once familiarized with her artifices, I predicted with decision *all* the phenomena by the sensation of touch alone.

Being a good observer, I am absolutely certain that I was not deceived. I was neither hypnotized, nor was I at all frightened during the "bringing in" of objects. And, as I am not a lunatic, I believe that a certain weight should be given to my affirmations.

It is true that, during the séance, I was not sincere, disguising the truth of the efficacy of my control. I did that with the sole purpose of making Eusapia think that I was a convert to Spiritualism. I did this to *avoid scandal.* But, once the sitting was over, the Truth choked me, and I was most eager to communicate it to my great benefactor and official superior.

It is not prudent to be too affirmative. It is for that reason that I have always been reserved in my interpretation of natural phenomena. Consequently, I am unable to be so terribly affirmative as to take oath to the absolute charlatanism of the manifestations of Eusapia, before, as Shakespeare says, I have "rendered assurance doubly sure."

I have no personal ambition in the spiritistic line, and all the careful observations that I made during this séance of November 21 are only one stone the more contributed to the edifice of Truth.

It is not on account of prejudice that I do not believe in the reality of the manifestations, and I can assure you, if I were able to see *the least* phenomenon that was really extraordinary or inexplicable, I should be the first to confess my error.

The reading of several books has led me to admit the possible reality of these manifestations, but direct experience has convinced me of the contrary.

My frankness in this report unhappily borders upon indiscretion. But frankness is here synonymous with devotion, for it would be to betray you if I were false for an instant to the sacred cause of Truth.

Report of M. Mathieu.

(*Séance of November 25*)

The séance opens at 9.30. M. Brisson, controller on the left, puts his feet on Eusapia's feet; M. Flammarion, controller on the right, holds her knees. In a moment the table leans to the right, its two left feet are lifted and then it falls back; then follows the lifting of the two right feet, and finally the lifting of the whole table off of its four feet to a height of about seven inches above the floor (contact of feet certain and knees motionless). I take a photograph.

At 9.37 a slight lifting on the left; then a lifting on the right, and a total levitation (photograph).

During the levitations of the table the salon is lighted by a strong Auer burner. It is now extinguished and is replaced by a little lamp which is placed behind a fire-screen at the farther end of the room. Absolute control of the hands and of the feet made by MM. Brisson and Flammarion.

M. Brisson is slightly touched on the right hip, and at this moment the two hands of Eusapia are plainly seen.

At 9.48 the curtain shakes and then puffs out three times in succession. M. Brisson is again touched on the right hip; the curtain is drawn back as if by a curtain-band. M. Flammarion, who holds Eusapia's hand, makes three ges-

tures and to each of his gestures corresponds a new divergence of the portière. Eusapia recommends that we "give attention to the temperature of the medium; it will be found to be changed after each phenomenon."

At 9.57 the light is diminished and is henceforth very feeble. The curtain bellies out, and at the same moment M. Brisson is touched; then the curtain is flung forcefully over the table. At the request of Eusapia, M. Delanne lightly touches her head behind, and the curtain slightly trembles.

Eusapia asks that a window be partly opened, the one in the middle of the salon, saying that we shall see something new. M. Flammarion holds with his left hand the knees of the medium, and with his right hand holds the wrist, the thumb, and the palm of her right hand before him at the height of the eyes. M. Brisson holds the left hand. Eusapia seems to call something from the direction of the window, making gestures, and saying, "I will catch it." Then a little branch of privet comes and touches M. Flammarion's hand, apparently arriving from somewhere near the window. M. F. takes this branch. A moment later two spindle-tree branches come from behind the curtain at the height of M. Brisson's head and past the edge of the curtain, which is pulled up and back. The branches fall on the table.

M. Brisson, all this time at Eusapia's left, is next touched on the hip, *at a moment when the hand of the medium is at the height of M. Flammarion's beard.* Then the chair of M. Brisson is pulled and pushed about. We hear distinctly, behind the curtain, sounds from the shaking of the round table, upon which is the tambourine. Certain vibrations of the tambourine are produced, corresponding to the movements of the round table. At this moment M. Brisson mentions the fact that he has been out of touch with the foot of the medium for about half a second, but he is then holding her two thumbs about ten inches apart, and M. Flammarion has her right hand close to his breast. The right hand of M. Brisson, holding the left of Eusapia, passes behind the curtain, and M. Brisson says that he has the impression of something like a dress-skirt puffed out against his ankle.

Thereupon ensues new jolting and bumping of the round

table and the tambourine, with displacement of the round table. (Undoubted control by MM. Flammarion and Brisson.)

10.30. Clattering noises of the round table in the cabinet are heard. M. Flammarion makes gestures with his hand, and synchronistic movements of the table and of the tambourine take place in the dark cabinet.

10.35. Eusapia asks for a few minutes' rest. The sitting is resumed at 10.43. The violin and the bell are hurled with force through the cleft in the curtain (M. Brisson gives assurance that he holds Eusapia's left hand by the thumb, upon her knees, and M. Flammarion the entire right hand). At this moment a photograph is taken by flash-light. Cries and groans from Eusapia, blinded by the light.

The sitting begins again some minutes afterward, and M. Jules Claretie, sitting at the left of M. Brisson, has his fingers twice touched by a hand. M. Baschet, who is standing away from the table, holds out a violin to the curtain: the violin is seized and thrown into the cabinet. He holds a book out to the curtain: this book is seized, but falls to the floor, *before the curtain.*

M. Claretie presents a cigarette-holder and feels a hand which tries to seize it, but he resists and will not let it go. M. Flammarion asks him to let go of the object: the hand bears off the prize. A moment after, this object is thrown from the cleft between the two curtains against Mme. de Basilewska at the other end of the table. It had been both presented and removed at the middle of the curtain.

At eleven o'clock Eusapia begs for a little more light. M. Claretie has become controller of the left in place of M. Brisson. He is touched on the left side. Then the round table is overturned while advancing toward the main table. M. Claretie perceives that his chair is moving backwards, as if pulled back; then he is hit on the shoulder and experiences a strong pressure under the arm-pit. The curtain suddenly approaches M. Claretie, brushes against him, and envelops both himself and the medium. M. Claretie is then pinched in the cheek. M. Flammarion presents to the curtain the hand of Mme. Fourton, and the two hands are pinched through the curtain.

The music-box, which is in the dark cabinet, falls on the table; Mmes. Gagneur and Flammarion at the same moment make mention of a hand. M. Baschet presents the music-box to the curtain; a hand seizes it through the curtain, he resists, the hand pushes him away; he presents it again, the hand seizes it and throws it back, and the box thus thrown wounds M. Claretie, who is struck beneath the left eye. The tambourine is thrown forward upon the table after having remained suspended a moment above the head of the medium.

At 11.15 a complete levitation of the table for seven or eight seconds. Absolute control by MM. Flammarion and Claretie. M. Flammarion has his knee pinched by a hand. Next the round table is transferred to the knees of M. Claretie and is forced upon him in spite of all his resistance. Levitations of the table take place in full light. Verification of the feet. The feet of one of the controllers are beneath, those of the other above, and those of the medium between the two.

Report of M. Pallotti

(Séance of November 14)

(There are present at this séance, besides the hosts of the evening: M. and Mme. Brisson, M. and Mme. Pallotti, M. le Bocain, M. Boutigny, Mme. Fourton.)

At the commencement of the sitting several levitations of the table took place, and, when I asked the spirit who was present if he could let me see my daughter Rosalie, I obtained an affirmative reply. I then made an agreement with the said spirit that a series of eight regular raps would indicate to me the moment when my dear daughter would be present. After some minutes of waiting, the number of raps agreed on was heard in the table. These raps were vigorous and made at fixed intervals.

I found, at this time, that I was placed opposite to the medium,— that is to say, facing her,— at the other end of the table. When I asked the spirit to embrace me and

caress me, I immediately felt an icy breath before my face, but yet without experiencing the least sensation of contact.

When the medium announced the materialization of the spirit in these words, "*E venuta, e venuta*" ("She is here, she is here"), I distinguished over the middle of the table a spectral form, dim and confused, but which, little by little, grew brighter, and took the shape of the head of a young girl of the same stature as Rosalie.

When objects, such as the music-box, violin, or the like, were unexpectedly brought before us, I saw very plainly the shape of a little hand emerging from the curtain that hung close by me, and which placed these different objects upon the table.

I ought to declare that, during these inexplicable phenomena, the chain was not broken for a single moment: it would consequently have been materially impossible for one of us to have made use of his hands.

I will now describe the last phenomena in which I was for a little while both actor and spectator. These events closed the séance.

One of the company, M. Boutigny, who was affianced to my daughter, having left the table to give his place to one of the spectators, I saw him approach the curtain of which I have spoken, which at once gaped open by his side. I ascertained this fact very precisely.

M. Boutigny then announced to us aloud that he was being very affectionately caressed. The medium, who was at this moment in an extraordinary state of agitation, kept saying, "*Amore mio, amore mio!*" ("My love, my love!"), and, addressing herself to me, called to me several times in the following words, "*Adesso vieni tu! vieni tu!*" ("Come at once, come!")

I hastened to take the place which M. Boutigny occupied near the curtain, and I was scarcely there when I felt myself kissed several times. I was able for an instant to touch the head which was kissing me, which, however, drew back from the contact of my hands.

I ought to say that, while these events were taking place, my eyes were carefully observing the medium as well as the persons who were by my side. I can therefore, boldly cer-

tify that I was not the victim of any illusion or subterfuge, and that the head which I touched was the head of a real and unknown person. I felt myself afterwards gently stroked several times, upon the face and head, the neck and the breast, by a hand which came out from behind the curtain. At last I saw the portière move aside and a little hand, very moist, very soft, stretched out and placed on my right hand. Quick as thought, I reached my left hand to this place to seize it; but, after having held it closely pressed in mine for several seconds, it seemed to melt away between my fingers.

Before closing, let me say, by way of additional authentication, that M. Flammarion had the extreme kindness to have this séance given for my family and myself, and it therefore took on a very markedly private character.

The séance having lasted from 9.20 to 11.45 P.M., we several times asked the medium if she felt fatigued. Eusapia said no. It was only when the last experiment took place, when we (myself and my family) had been caressed and embraced, that the medium, feeling tired, decided to end the sitting.

My wife is convinced, as I am, that she embraced her daughter, recognizing her hair and the general appearance of her person.

Report of M. Le Bocain

(*The Same Séance*)

The following are some extraordinary phenomena which I observed during the course of this séance and of which I believe I can give a report as exact as it is impartial, having personally taken the most minute precautions to assure myself of the perfect fairness of the conditions under which these different wonders were produced.

I only speak, be it understood, of circumstances or actions with which I myself was associated both as actor and as spectator.

1. At the opening of the sitting and *during the time* that the table was engaged in all sorts of noisy pranks, I clearly felt the pressure of a hand clasping me in a friendly way

upon the right shoulder. In order to make the matters clear, I ought to depose that —

a) I sat at the left of the medium and held her hand; that, furthermore, during the whole sitting her foot was placed on mine.

b) That, with Eusapia's hand always tightly pressed in mine, I proved, by *suddenly* placing it upon her knees, *at the very moment that the table was rising from beside us*, that her lower limbs were in a normal position and *absolutely motionless.*

c) For these different reasons, it seems to me, in fact, *impossible* that Eusapia could have made any use whatever of these two limbs (which happened to be placed by me) to execute a movement, even unconscious, that could give rise to the least suspicion.

2. At a certain point in the proceedings I felt on my right cheek the sensation of a fondling caress. I felt very distinctly that it was a real hand which was touching my skin, and nothing else. The hand in question seemed to me of small size, and the skin was soft and moist.

3. Towards the end of the séance I felt upon my back a gust of cold air, and at the same time *I heard* the curtain behind me slowly open.

Then, when I turned around, very much puzzled, I perceived standing at the lower end of this kind of alcove a form,— indistinct, it is true, but not so much so that I could not recognize the silhouette of a young girl whose figure was slightly beneath the average. I ought to say here that my sister Rosalie was also of short stature. The head of this apparition was not very distinct. It seemed surrounded by a short of shaded aureole. The whole form of the statue, if I may so express myself, stood out very little from the dim obscurity from which it had emerged; that is to say, it was not very luminous.

4. I addressed myself to the spirit in Arabic, in very nearly the following terms:

"If it is really thou, Rosalie, who art in the midst of us, pull the hair on the back of my head three times in succession."

About ten minutes later, and when I had almost com-

pletely forgotten my request, I felt my hair pulled three separate times, just as I had desired. I certify this fact, which, besides, formed for me a most convincing truth of the presence of a familiar spirit close about us.

LE BOCAIN, *Illustrator,*
Rire, Pêle-Mêle, Chronique Amusante, etc.

I have restricted myself to presenting here these different reports,* in spite of certain contradictions, and even because of them. The reports mutually supplement each other and form a complete whole, through the entire independence of each observer.

You see how complex the subject is, and how difficult it is to form a radical conviction, an absolute scientific judgment. Some phenomena are incontestably true: there are others which are doubtful and which we may attribute to fraud, conscious or unconscious, and sometimes also to illusions of the observers. The levitation of the table, for example, its complete detachment from the floor under the action of an unknown force acting in opposition to the law of gravity, is a fact which cannot reasonably be contested.

I may remark, in this connection, that the table almost always rises hesitatingly, after balancings and oscillations, while, on the contrary, when it falls back it goes straight down at one swoop, alighting squarely on its four feet.†

* To these eight séances I might add a ninth, which took place on the succeeding December 5, in the study of Prof. Richet. Nothing remarkable occurred, unless it was the inflation, in full light, of a window curtain, which was about twenty-four inches from Eusapia's foot, my foot and leg being between it and her. The observation was absolutely accurate.

† To what cause may we attribute the levitation of the table? We have undoubtedly not yet discovered the secret. The action of gravity may be counterbalanced by movement.

You can amuse yourself, while at breakfast or dinner, by toying with a knife. If you hold it vertically in your tightly closed hand, its weight is counterbalanced by the pressure of the hand and it does not fall. Open your hand, still holding the knife grasped by the thumb and index finger, and it will slide as if it were in a too large

On the other hand, since the medium constantly seeks to release one hand (generally her left hand) from the control designed to hinder her from doing so, a certain number of the touches felt and of the displacements of objects may be due to a substitution of hands. This behavior of hers will be the subject of a special examination in the following chapter.

But it would be impossible by the whole force of the hand to produce the violent movement of the curtain, which seems to be inflated by a tempestuous wind, and projected to the very centre of the table, forming a great hood around the heads of the sitters. To fling out the curtain with such force, it would be necessary for the medium to rise and push on it as hard as she could with her extended arms — not once merely, but again and again. But how can she do this when she is all the while seated tranquilly in her chair?

These experiments place us in a special environment or atmosphere, on the different physical and psychical characters of which it is difficult to form an opinion.

At the time of the last séance, during which M. and Mme. Pallotti are sure of having seen, touched, and embraced their daughter, I saw nothing, at that moment, of this spectral form, although it was only a few yards from me, and although I had perceived, some moments before, the head of a young girl. It is true that, out of respect for their emotion, I did not approach their group. But I kept careful watch, and I perceived no one but the living.

tube. But move the hand by a rapid see-saw movement, from left to right, from right to left: you will thus create a centrifugal force which holds the object in vertical suspension, and which may even toss it above your hand and project it into the air, if the movement is rapid enough.

What, then, sustains the knife, annihilates its weight? Force. Might it not be that the influence of the experimenters seated around the table puts in special movement the molecules of the wood? They are already set in vibration by variations of temperature. These molecules are particles infinitely small which do not touch each other. Might not a molecular movement counterbalance the effect of gravity? I do not present this as an explanation, but as an illustrative suggestion (*comme une image*).

At the séance of November 10 the noise of a sonorous object notified us of a displacement, a movement. We seem to hear the violin strings lightly touched. It is, in fact, the little violin on the round table, which is lifted to a height somewhat above that of the head of the medium, passes into the opening between the two curtains, and appears before us with the neck forward. The idea comes into my head to grasp this instrument during its slow passage through the air; but I hesitate, because I wish to see what will become of it. It comes as far as the middle of the table, descends, then falls, partly upon the table, partly upon the left hand of M. Brisson and the right hand of Mme. Fourton.

That was one of the most accurate observations that I made at this séance. I did not let go of Eusapia's right hand for a single instant, and M. Brisson did not for a moment let go of her left hand.

But in the face of phenomena so incomprehensible we always revert to scepticism. In the séance of November 19 we had thoroughly resolved this time not to leave any loophole for doubt as to the hands, to hinder every attempt at substitution, and to have the most complete control of each hand, without having our attention withdrawn from this object for a single moment. Eusapia has only two hands. She belongs to the same zoölogical species that we do, and is neither trimanous nor quadrumanous.

It was enough, then, that there were two of us; that each one took a hand of the medium and kept hold of it between the thumb and the forefinger, that no possible doubt might arise, drew in the elbows, and held the said hand as far removed as possible from the axis of the medium's body and pressed against our own person, so as to remove the objection about the substitution of hands.

That was the essential object of this séance, as far as concerned M. Brisson and me. He had charge of the left

hand. I had charge of the right. I need not add that I am as sure of the loyalty of M. Brisson as he is sure of mine, and that, forewarned as we were, and holding this séance for the express purpose of this control, we could neither of us be the dupes of any attempt at fraud, so far as regards that occasion, at least.

The famous medium, Home, had several times spoken to me of a curious experiment that he and Crookes made with an accordion held in one of his hands and playing all by itself, without the lower end being held by another hand. Crookes has represented this experiment by a sketch in his memoir upon this subject. The medium is seen holding the accordion with one hand in a kind of open-work cage, and the accordion is playing by itself. I shall give the details of this matter farther on.

I tried the experiment in another way, by holding the accordion myself, and not letting it be touched by the medium. The feats which we had just witnessed, and which were performed while Eusapia had her hands securely held, gave me the hope of succeeding, so much the more because we believed that we had seen fluid hands in action.

I, therefore, take a little new accordion, bought that evening in a bazaar, and, approaching the table and remaining in a standing position, I hold the accordion by one side, resting two fingers upon two keys, in such a way as to permit the air to pass in case the instrument should begin to play.

So held, it is vertically suspended by the stretching out of my right hand to the height of my head, and above the head of the medium. We make sure that her hands are all the time tightly held and that the chain is unbroken. After a short wait of five or six seconds I feel the accordion drawn by its free end, and the bellows is immediately pushed in several times successively; and at the same time the music is heard. There is not the least doubt

that a hand, a pair of pincers, or what-not, has hold of the lower end of the instrument. I perceive very well the resistance of this prehensible organ. All possibility of fraud is eliminated; for the instrument is well above Eusapia's head, her hands are firmly held, and I distinctly see the distention of the curtain as far as the instrument. The accordion continues to make itself heard, and is pulled on so strongly that I say to the invisible power, "Well, since you have such a good hold on it, keep it!" I withdraw my hand, and the instrument remains as if glued to the curtain. It is no longer heard. What has become of it? I propose to light a candle to hunt for it. But the general opinion is that, since things are going so well, it is better to make no changes in the environment. While we are talking, the accordion begins to play,— a slight and rather insignificant air. In order to do that, it must be held by two hands. At the end of fifteen or twenty seconds it is brought to the middle of the table (playing all the while). The certainty that hands are playing it is so complete that I say to the Unknown, "Since you hold the accordion so well, you can doubtless take my hand itself." I reach out my arm at the height of my head, rather a little higher. The curtain inflates, and through the curtain I feel a hand (a pretty strong left hand); that is to say, three fingers and the thumb, and these grasp the end of my right hand.

Let us suppose for an instant that the accordion could have been pulled by one of Eusapia's hands, which she had released, lifted up, and screened behind the curtain. It is a very natural hypothesis. Let us say that the two controllers on the right and on the left respectively were cheated by the dexterity of the medium. That is not impossible. But, then, that the instrument might play, our heroine would have had to release her two hands and leave the two con-

trollers at loggerheads with their own hands. It is something not to be thought of.

Apropos of the existence of a third hand, a fluid hand, created on the spur of the moment, with muscles and bones (an hypothesis so bold that one hardly dares to express it), I relate here what we observed during the sitting of November 19.

M. Guillaume de Fontenay, with whom the experiments at Montfort-l'Amaury were made, in 1897, at the home of the Blech family, had come on purpose from the centre of France, with a great profusion of apparatus and of new processes, to try to get some photographs. The medium appeared to be enchanted with them, and toward the middle of the soirée said to us, "You are going to have, this evening, something that you did not expect, something which has never been accomplished by any other medium, and which can be photographed as an unimpeachable record." She then explains to us that I am to lift my hand up, while firmly holding hers by the wrist; that M. Sardou, while holding her left hand, will keep watch over it above the table, and that then her third hand will appear in the photograph, her fluidic hand, holding the violin near her head, at some distance from her right hand, behind her, and against the curtain.

We wait pretty long before anything happens. At length, the medium trembles, sighs, recommends that we breathe deeply and thus aid her, and we feel, rather than see, the moving of the violin through the air, with a slight vibrating noise of the strings. Eusapia cries, "It is time, take the photograph, quick, don't wait, fire!" But the apparatus does not work: the magnesium won't kindle. The medium grows impatient, still holds out, but cries that she cannot hold out much longer. We all vehemently clamor for the photograph. Nothing moves. In the darkness, which is

needed in order that the plate in the camera shall not have to be veiled, M. de Fontenay does not succeed in lighting the magnesium, and the violin is heard to fall to the floor.

The medium seems exhausted, groans, laments, and we all regret this check to the proceedings; but Eusapia declares that she can begin again, and asks us to get ready. In fact, at the end of five or six minutes the same phenomena are produced. M. de Fontenay explodes a chlorate of potassium pistol. The light is instantaneous, but feeble. It enables us to see Eusapia's left hand being held upon the table by M. Sardou's right hand, her right hand held in the air by my left hand, and at a distance of about twelve inches in the rear, at the height of one's head, the violin, resting vertically against the curtain. But the photograph gives no picture.

Eusapia now asks for a little light (*"poco di luce"*). The small hand-lamp is lighted again, and the illumination is sufficient for us to see each other distinctly, including the arms, the head of the medium, the curtain, etc. The chain is formed again. The curtain flares widely out, and M. Sardou is several times touched by a hand which gives him a good whack on the shoulder, making him bend his head forward toward the table. In the presence of this manifestation and of these sensations we have again the impression that there has been a hand there, a hand different from those of the medium (which we continue carefully to hold),— and from ours, because we are holding each other's hands in the chain. Moreover, there is no one near the curtain, which is plainly visible. I thereupon remark, " Since there is a hand there, let it take from me this violin, as it did day before yesterday." I take the violin by the handle and hold it out to the curtain. It is at once taken and lifted, then falls to the floor. I do not for a moment let go the hand of the medium. Yet I grasp this hand

with my right hand, for a moment, in order to pick up with my left the violin that has fallen near me. As I stoop down to the floor, I feel an icy breath upon my hand, but nothing more. I take the violin and put it on the table; then I take again with my left hand the hand of the medium, and, seizing the violin with my right, I hold it out again to the curtain. But Mme. Brisson, peculiarly incredulous, asks me to let her take it herself. She does so, holds it out to the curtain, and the instrument is snatched from her, in spite of all the efforts that she makes to retain it. Everybody declares they saw very distinctly this time.

The hands of the medium have not been let go a single minute.

It seems as if this experiment, made under these conditions, in sufficient light, ought to leave no doubt about the existence of a third hand of the medium which acts in obedience to her will. And yet! —

During this same soirée of November 19 I ask that the violin, which has fallen to the floor, be brought again upon the table. We keep holding carefully the medium's hands, M. Sardou her left hand and I her right. Eusapia, wishing to give still more security, more certainty, proposes that I take her two hands, the right as I am holding it, and her left wrist in my right hand, her left hand always being held by M. Sardou,— *the whole show of hands taking place on the table.* A noise is heard. The violin is brought on, passes above our hands, thus criss-crossed, and is laid down, farther on, in the middle of the table. A candle is lighted, and the position of our hands is ascertained. They have not moved. Some time after this phenomena, in the dim light, we all saw will-o'-the-wisps shining in the cabinet. They were visible through the cleft in the curtains, which at that time was rather wide. For my part, I saw three of them, the first very brilliant, the others less intense. They were not

tremulous, nor did they stir in the least, and remained in view scarcely more than a second.

M. Antoniadi having remarked that he is not always sure of holding her left hand, Eusapia says to me in a flush of passion, "Since he is not sure, take my two hands yourself again." I already hold the right, and am absolutely certain of it. I thereupon take her left wrist in my right hand, M. A. declaring that he will take care of the fingers. In this position, Eusapia's two hands being thus held above the table, a cushion, which is at my right upon the table, having been forcibly thrown there some moments before, is seized and thrown over the sofa, brushing my forehead on the left. Those who sit at the table and form the chain affirm that the hands of the chain have not lost touch with each other.

Here is another circumstance recorded in the notes of Mme. Flammarion:

We were almost in complete darkness,— the lamp, removed as far as possible from Eusapia, having only the dim glow of a night-lamp. Eusapia was seated at the experiment table,— between MM. Brisson and Pallotti, who were holding her two hands,— and almost facing this lamp.

Mme. Brisson and I were seated some yards distant from Eusapia, one of us on the side and the other in the middle of the salon, Eusapia facing us, while we had our backs turned to the light. This allowed us to distinguish well enough everything that passed before us.

Up to the moment when the event that I am going to relate took place, Mme. Brisson had remained almost as incredulous as I, apropos of the phenomena, and she had just been expressing to me in a low tone her regret at not having yet seen anything herself, when, all of a sudden, the curtain behind Eusapia began to shake and move gracefully back, as if lifted by an invisible curtain band,— and what do I see? The little table on three feet, and leaping (apparently in high spirits) over the floor, at the height of about eight

inches, while the gilded tambourine is in its turn leaping gayly at the same height above the table, and noisily tinkling its bells.

Stupefied with wonder, quick as I can I pull Mme. Brisson to my side, and, pointing with my finger at what is taking place, "Look!" said I.

And then the table and the tambourine begin their carpet-dance again in perfect unison, one of them falling forcibly upon the floor and the other upon the table. Mme. Brisson and I could not help bursting out into laughter; for, indeed, it was too funny! A sylph could not have been more amusing.

Eusapia had not turned around. She was seen seated; and her hands, placed before her, were held by the two controllers. Even if she had been able to free both her hands, she would not have been able to take hold of the round table and tambourine, except by turning around; and the two ladies saw them leaping about all alone.

I observe to Eusapia that she must be very tired, that the séance has lasted over two hours and has yielded extraordinary results, and that it is perhaps time to end it. She replies that she desires to continue still a little longer, and that there will be new phenomena. We accept with pleasure, and sit down and wait.

Then she lays her head on my shoulder, takes my entire right arm, including the hand, and putting my leg between hers, and my feet between her feet, she held me very tight. Then she begins to rub the carpet, drawing my feet along with hers, and squeezing me tighter than before. Then she cries, "*Spetta! spetta!*" ("Look! look!"); then, "*Vieni! vieni!*" ("Come! come!") She invites M. Pallotti to take a place behind his wife and see what will happen. I must add that both of them had been earnestly asking, for some minutes, if they might see and embrace their daughter, as they had done at Rome.

After a new nervous effort on the part of Eusapia, and a kind of convulsion accompanied by groans, complaints, and cries, there was a great movement of the curtain. Several times I see the head of a young girl bowing before me, with high-arched forehead and with long hair.

She bows three times, and shows her dark profile against the window. A moment after we hear sounds from M. and Mme. Pallotti. They are covering with kisses the face of a being invisible to us, saying to her with passionate affection, "Rosa, Rosa, my dear, my Rosalie," etc. They say they felt between their hands the face and the hair of their daughter.

My impression was that there was really there a fluidic being. I did not touch it. The grief of the parents, revived and consoled at the same time, seemed to me so worthy of respect that I did not approach them. But, as to the identity of the spectral being, I believed it to be a sentimental illusion of theirs.

I come now to the strangest circumstances of all, the most incomprehensible, the most incredible, of any that we experienced in our séances.

On November 21 M. Jules Bois presents a book before the curtain at about the height of a man standing upright. The salon is dimly lighted by a little lamp with a shade, set pretty well to one side. Yet objects are seen with distinctness.

An invisible hand behind the curtain seizes the book. Then all the observers see it disappear as if it had passed through the curtain. It is not seen to fall before the curtain. It is an octavo, rather slender, bound in red, which I have just taken from my library.

Now Mme. Flammarion, almost as sceptical as M. Baschet about these phenomena, had glided past the window to the rear of the curtain, in order to observe carefully what

was passing. She hoped to detect a movement of the medium's arm, and to unmask her, in spite of the courtesy she owed her as her hostess. She saw very plainly Eusapia's head, motionless before the mirror which reflected the light.

Suddenly the book appears to her, it having passed through the curtain,— upheld in the air, without hands or arms, for a space of one or two seconds. Then she sees it fall down. She cries, "Oh! the book: it has just passed through the curtain!" and, pale and stupefied with wonder, she abruptly retires among the observers.

The entire hither side of the curtain was plainly visible, because the left portion of the left-hand curtain had been loosened from its rod by the weight of a person who had sat down on the sofa where the lower part of the curtain had been accidentally placed; and because a large opening had been made fronting the mirror which filled the entire wall of the farther end of the salon,— a mirror that reflected the light of the little lamp.

If such an event had really taken place, we should be forced to admit that the book went through the curtain without any opening, for the tissue of the fabric is wholly intact; and we cannot suppose for a single moment that it passed through at the side, the book having been held out about the middle,— that is to say, about twenty-four inches from each side of the curtain, the breadth of which is four feet.

Nevertheless, this book was seen by Mme. Flammarion, who was looking behind the curtain; and it disappeared from the eyes of the persons who were in front, notably M. Baschet, M. Brisson, M. J. Bois, Mme. Fourton and myself. We were not expecting this miracle in any way; we were stupefied by it; we asked what had become of the book, and it seemed as if it had fallen behind the curtain.

Collective hallucination? But we were all in cool blood, entirely self-possessed.

If Eusapia had been able to adroitly slip her hand around and seize the book through the portière, the bare outline of the book would not have been seen, but a protuberance of the portière.

How great a value the sight of this thing passing through a portière would have as a scientific datum, if one were only sure of the absolute honesty of the medium,— if, indeed, this medium were a man of science, a physicist, a chemist, an astronomer, whose scientific integrity would be above suspicion! The mere fact of the possibility of fraud takes away ninety-nine one-hundredths of the worth of the observation, and makes it necessary for us to see it a hundred times before being sure. The conditions of certainty ought to be understood by all investigators, and it is curious to hear intelligent persons express surprise at our doubts, and at the strict scientific obligation we are under to lay down these conditions. In order to be sure of abnormalities like these levitations, for example, we must make sure of them a hundred times over; not see them once, but a hundred times.

It seems to us impossible that matter could pass through matter. You place for example a stone upon a napkin. If one should tell you that he has found it under the napkin, without any break in the continuity of the tissue, you would not believe him. However, I take a piece of ice, weighing say two pounds, and place it upon a napkin; I place both upon a strainer in the oven; the piece of ice melts, passes through the napkin, and falls drop by drop into a basin. I put the whole thing into a freezing machine, the melted water congeals again; the piece of ice weighing two pounds has passed through the napkin.

It is very simple, you think. Yes, it is simple because

we understand it. But, of course, this is not the same case as that of the book. Yet, after all, it is matter passing through matter, after a transformation of its physical condition.

We might seek explanations, invoke the hypotheses of the fourth dimension, or discuss the non-Euclidian geometry. It seems to me more simple, however, to think that, on the one hand, these experiments are not yet sufficient for us to make an absolute affirmation, and that, on the other hand, our ignorance of everything is formidable and forbids us to deny anything.

The phenomena of which I am speaking are so extraordinary that one is led to doubt them, even when one feels assured that he has seen them. Thus, for example, I noticed that M. René Baschet — my learned friend, present editor of *Illustration* — affirmed before us all, during the séance and afterward, that he saw with his own eyes, under the table, a head like that of a young girl of about twelve years of age, together with the bust. This head sank down vertically while he was looking at it and disappeared. He made the affirmation on the 21st, repeated it on the 22d at a theatre where we met, and on the 25th again at his home. Some time after, M. Baschet was convinced that he had been deceived, that he had been the dupe of an illusion. That is also possible. I was looking at the same time, as well as other persons, and we did not see anything.

It is then very human, when we are thinking, some days later, of these curious things, for us to suspect ourselves.

But there are prejudices less explicable. Thus, for example, at the séance of November 28 a distinguished engineer, M. L., absolutely refused to admit the levitation of the table, in spite of the evidence. Of this my readers may judge for themselves. Here is a note which I extract from my reports:

M. L. tells me that the medium lifts the table *with her feet,* while resting her hands upon it. I ask Eusapia to draw back her feet under her chair. The table is lifted.

After this second levitation, M. L. declares that he is not satisfied (although neither of the feet of the medium is under a foot of the table), and that we must begin the experiment again, without having *her legs* touched at any point. The medium then proposes that her legs be fastened to those of M. L. A third levitation takes place, after the left leg (the incriminated one) of the medium has been bound to the left leg of M. L.

This gentleman then declares that the hypotheses he has made, in order to explain the phenomenon, are null and void, but that there must be, all the same, a trick in the thing, because he does not believe in the supernatural.

Neither do I believe in the supernatural. And yet there is no trick.

This manner of reasoning, rather common, does not seem to me scientific. It is to claim that we know the limits of the possible and of the impossible.

People who deny that the earth moves reason in just this way. That which is contrary to common sense is not impossible. Common sense is the average state of popular knowledge; that is to say, of general ignorance.

A man acquainted with the history of the sciences, and who reasons calmly, cannot succeed in understanding the ostracism to which certain sceptics subject unexplained phenomena. "It is impossible," they think. This famous common sense on which they plume themselves is nothing after all, let me say, but common opinion, which accepts habitual facts without comprehending them, and which varies from time to time. What man of good sense would formerly have admitted that we should one day be able to photograph the skeleton of a living being, or store up the voice in a phonograph, or determine the chemical composition of an inaccessible star? What was science a

hundred years ago, two hundred years, three hundred? Look at astronomy five hundred years ago, and physiology, and medicine, and natural philosophy, and chemistry. In five hundred years, in a thousand years, in two thousand years, what will these sciences of ours be? And in a hundred thousand years? Yes, in a hundred thousand years, what will human intelligence be? Our actual condition will be to that what the knowledge of a dog is to that of a cultivated man; that is to say, there is no possible comparison.

We smile to-day at the science of learned men of the time of Copernicus or Christopher Columbus or Ambroise Paré, and we forget that, in a few centuries, savants will estimate us in the same fashion. There are properties of matter which are completely hidden from us, and humanity is endowed with faculties still unknown to us. We only advance very slowly in the knowledge of things.

The critics do not always give proof that they possess a very compact logical power. You speak to them of facts proved by centuries of testimony. They challenge the value of popular testimony, and declare that these uncultivated folks, these petty merchants, these manufacturers, these laborers, these peasants, are incapable of observing with any exactitude.

Some days after, you cite the savants, men whose competence has been proved in the objective sciences of observation, which attest these very facts, and you hear the sneerers answer that those savants are competent witnesses in their special lines of study and work, but in nothing apart from these.

So, after this fashion, all testimony is refused. They declare that the thing, being impossible, cannot have been observed at all.

Of course there is room for a good deal of analysis in discussing the claims of human testimony. But, if we sup-

press every piece of testimony, what will there be left? — our native ignorance.

But, to tell the truth, there are some of these negative gentry who are sure of everything, and who impose their aphorisms upon us with the authority of a czar giving out his ukase or edict.

From these different experiments with Eusapia Paladino, including those described in the first and second chapters, the impression is left that the phenomena observed are, to a great extent, real and undeniable; that a certain number may be produced by fraud; but that, in fact, the subject is very complex. Again, certain movements simply belong to the material order, while others belong at once to the physical order and the psychical order. All this study is vastly more complicated than people in general have any idea of. I am going to pass summarily in review other experiments made by the same medium, and shall afterwards devote a special chapter to the examination of frauds and mystifications.

Let us look, first, at other achievements of Eusapia, and select from them whatever they also have to impart in the way of instruction or caution.

CHAPTER IV

OTHER SÉANCES WITH EUSAPIA PALADINO

The medium, whose marvellous séance performances we have been describing has been the subject of a long series of observations by eminent and careful experimenters. Her endowments are indeed exceptional. When you study with Eusapia, the comparison of her powers with those of ordinary cases makes you think of the difference between a fine electrical machine operated under good atmospheric conditions and a bad one operated on a rainy day. You see more with her in one hour than in a host of faulty trials with other mediums.

Our study of these unknown forces will progress rapidly if, in place of limiting the results obtained to one or two groups, such as those which precede, we examine the totality of the observations made in the séances of this medium. My readers can then compare them with the preceding ones; they can judge, they can make their own estimates.

The documents which I am now going to print are all borrowed from the *Annales des sciences psychiques* and from the valuable collection of M. Albert de Rochas upon *The Externalization of Motivity.*

A few words, first, about the débuts of Eusapia in her mediumistic career.

Professor Chiaia, of Naples, to whom I owe it that I was able to receive Eusapia at my house and obtain the experiments reported above, was the first to bring her gifts into public notice. He first published on the 9th of August,

1888, in a journal issued at Rome, the following letter addressed to Professor Lombroso:

Dear Sir,— In your article, *The Influence of Civilization upon Genius* (which has incontestable beauties of style and of logic), I noticed a very happy paragraph. It seems to me to sum up the scientific movement (starting from the time when man first invented that head-breaking thing called an alphabet) down to our own day. This paragraph reads as follows:

"Every generation is prematurely ready for discoveries which it never sees born, since it does not perceive its own incapacity and the means it lacks for making further discoveries. The repetition of any one manifestation, by impressing itself upon our brains, prepares our minds and renders them less and less incapable of discovering the laws to which this manifestation is amenable. Twenty or thirty years are enough to make the whole world admire a discovery which was treated as madness at the moment when it was made. Even at the present day academic bodies laugh at hypnotism and at homœopathy. Who knows whether my friends and I, who laugh at Spiritualism, are not in error, just as hypnotized persons are? Thanks to the illusion which surrounds us, we may be incapable of seeing that we deceive ourselves; and, like many persons of unsound mind who stubbornly oppose the truth, we laugh at those who are not of our way of thinking."

Struck by this keen thought, which by chance I find adapted to a certain matter with which I have been occupied for some time, I joyfully accept it, without abatement, without any comment which might change its sense; and, confining myself to the fine old rules of chivalry, I make use of it as a challenge. The consequences of this challenge will neither be dangerous nor bloody: we shall fight fairly; and, whatever may be the results of the encounter, whether I succumb or whether I make my opponent yield, it will always be in a friendly way. The result will tend to the improvement of one of the two adversaries and will be in every way useful to the great cause of truth.

There is much talk nowadays of a special malady which is found in the human organism. We notice it every day; but we are ignorant of its cause and know not what to call it. The cry is raised that it be subjected to the examination of contemporary science; but science, in reply, only meets the request with the mocking ironical smile of a Pyrrhus, for the precise reason (as you say) that the time is not yet ripe.

But the author of the paragraph I have quoted above, of course did not write it merely for the pleasure of writing. It seems to me, on the contrary, that he would not smile disdainfully if he were invited to observe a special case that is worthy to attract the attention and to seriously occupy the mind of a Lombroso. The case I allude to is that of an invalid woman who belongs to the humblest class of society. She is nearly thirty years old and very ignorant; her look is neither fascinating nor endowed with the power which modern criminologists call irresistible; but, when she wishes, be it by day or by night, she can divert a curious group for an hour or so with the most surprising phenomena. Either bound to a seat or firmly held by the hands of the curious, she attracts to her the articles of furniture which surround her, lifts them up, holds them suspended in air like Mahomet's coffin, and makes them come down again with undulatory movements, as if they were obeying her will. She increases their weight or lessens it according to her pleasure. She raps or taps upon the walls, the ceiling, the floor, with fine rhythm and cadence. In response to the requests of the spectators, something like flashes of electricity shoot forth from her body, and envelop her or enwrap the spectators of these marvellous scenes. She draws upon cards that you hold out everything that you want — figures, signatures, numbers, sentences — by just stretching out her hand toward the indicated place. If you place in the corner of the room a vessel containing a layer of soft clay, you find after some moments the imprint in it of a small or a large hand, the image of a face (front view or profile), from which a plaster cast can be taken. In this way, portraits of a face taken at differ-

ent angles have been preserved, and those who desire so to do can thus make serious and important studies.*

This woman rises in the air, no matter what bands tie her down. She seems to lie upon the empty air as on a couch, contrary to all the laws of gravity; she plays on musical instruments — organs, bells, tambourines — as if they had been touched by her hands or moved by the breath of invisible gnomes.

You will call that a particular case of hypnotism; you will say that this sick woman is a fakir in petticoats, that you would shut her up in a hospital. Let me beg of you, most eminent professor, not to shift the argument. As is well known, hypnotism only causes a momentary illusion; after the séance, everything takes its original form. But here the case is different. During the days which followed these marvellous scenes there remained traces and records worthy of consideration.

What do you think of that?

But allow me to continue. This woman, at times, can increase her stature by more than four inches. She is like an india-rubber doll, like an automaton of a new kind; she takes strange forms. How many legs and arms has she? We do not know. While her limbs are being held by incredulous spectators, we see other limbs coming into view, without knowing where they come from. Her shoes are too small to fit these witch-feet of her, and this particular circumstance gives rise to the suspicion of the intervention of mysterious power.

Don't laugh when I say "*gives rise to the suspicion.*" I affirm nothing; you will have time to laugh presently.

When this woman is bound, a third arm is seen to appear, and nobody knows where it comes from. Then follows a long series of droll teasing tricks. She abstracts bonnets, watches, money, rings, pins, and produces them again with great adroitness and gayety; she takes coats and waistcoats, pulls off boots, brushes hats and puts them back upon the heads of those to whom they belong, curls and strokes mustaches, and occasionally hits you with a fist, for she also has

* M. Chiaia has sent me photographs of these prints. I reproduce some of them here (Pl. VII).

PLATE VII. PLASTER CASTS OF IMPRESSIONS IN CLAY PRODUCED BY AN UNKNOWN FORCE.

fits of ill-temper. I said *a* fist, because it is always a clumsy and callous hand that strikes the blow. It has been noticed that the hand of the sorceress is small. She has large fingernails; has a moist skin, the temperature of which varies from the natural warmth of the body to the icy chill of a corpse the touch of which makes you shiver; she allows herself to be handled, pinched, observed; and ends by rising into the air, remaining suspended there with no visible means of support, like one of those plump wooden hands hung out over the sidewalk as a sign at the shops of the glove merchants.

I swear to you that I emerge with a very calm spirit from the cave of this Circe. Freed from her enchantments, I pass all my impressions in review, and end in scepticism, although the testimony of my senses assures me that I have not been the sport of an error or of an illusion.

All these extraordinary manœuvres cannot be attributed to prestidigitation. We ought to be on our guard against every kind of trickery, and make a scrupulous investigation in order to forestall mendacity or fraud.

But the test sometimes fails; the facts do not always meet the demands of the eager and restless spectators. This is one more mystery to explain, and proves that the individual herself who works these wonders is not their sole arbiter. Undoubtedly, she possesses the exclusive power of producing these portentous feats; but they cannot materialize except with the co-operation of an unknown agent, some *deus ex machina.*

From all this two things result; namely, the great difficulty there is in examining the true inwardness of this stupefying piece of charlatanry, and the necessity of making a series of experiments in order to get together enough of them to illuminate the dark intellects of the dupes and to overcome the obstinacy of the wranglers.

Now you see my challenge. If you have not written the paragraph cited above simply for the pleasure of writing it; if you have the true love of science; if you are without prejudices,— you, the first alienist in Italy,— please have the kindness to take the field, and persuade yourself that you are going to measure swords with a worthy adversary.

When you can take a week's vacation, leave your beloved studies, and, instead of going into the country, show me a place where we can meet. Choose the time yourself.

You are to have a room into which you will enter alone before the experiment; there you will arrange the furniture and other objects just as you wish; you will lock the door with a key. I believe it would be useless to present the lady to you in the costume worn in the Garden of Eden, because this new Eve is incapable of retaliating upon the serpent and of seducing you.

Four gentlemen will be our seconds, as is fitting in all knightly encounters; you will choose two, and I will bring the other two.

No easier conditions were ever drawn up by the Knights of the Round Table. It is evident that, if the experiment does not succeed, I shall be able to accuse only the harsh decrees of destiny; you will consider me but as a man suffering from hallucination, who longs to be cured of his extravagances. But, if success crowns our efforts, your loyalty will impose upon you the duty of writing an article, in which, without circumlocution, reticence, or error, you will attest the reality of the mysterious phenomena and promise to investigate their causes.

If you decline this meeting, please explain to me your sentence, "The time is not yet ripe." Undoubtedly, that might apply to common intellects, but not to a Lombroso, to whom is addressed this advice of Dante: "Honor ought to close the lips of falsehood with truth."

Yours very devotedly and respectfully,

(Professor) Chiaia.

M. Lombroso did not at once accept this eloquent and witty challenge. However, we shall presently find that learned professor himself experimenting. In the mean time read what M. de Rochas tells us of Eusapia's youth:—

Her first mediumistic manifestations began at the age of puberty, when she was about thirteen or fourteen years old. This coincidence is found in almost all the cases

in which the singular power of producing movements at a distance has been observed.

At this epoch of her life it was remarked that the Spiritualistic séances to which she was invited succeeded much better when she was seated at the table. But they tired and bored her, and she refrained from taking part in them for eight or nine years.

It was only in her twenty-second or twenty-third year that the Spiritualistic education of Eusapia began. It was directed by an ardent Spiritualist, M. Damiani. It was then that the personality of *John King* appeared, a spirit who took possession of her when she was in the trance state.*

This John King is said to be the brother of Crookes's Katie King, and to have been Eusapia's father in another existence. It is John who speaks when Eusapia is in her trance; when he speaks of her, he calls her "my daughter," and gives advice about the care of her person and life. M. Ochorowicz thinks this John is a personality created in the spirit of Eusapia by the union of a certain number of impressions collected in the different psychic environments in which her life has been passed. This would be almost the identical explanation for the personalities suggested by the hypnotists, and for the variations of personality observed by MM. Azam, Bourru, and Burot, et al.

Some have thought they noticed that Eusapia prepared herself, consciously or unconsciously, at the séance, by diminishing her respiration,— a very singular thing. At the same time, her pulse gradually rises from 88 to 120 pulsations a minute. Is this a practice analogous to that which the fakirs of India employ, or a simple effect of the emotion which, before every séance, Eusapia experiences? — a fact which has a strong tendency to convince the sitters, but is never sure of the production of the phenomena.

Eusapia is not hypnotized; she enters of herself into the trance state when she becomes a link in the chain of hands.

She begins to sigh deeply, then yawns and hiccoughs. A series of varied expressions passes over her face. Sometimes

* The word "trance" has been given to the peculiar state into which mediums fall when they lose the consciousness of their environment. It is a kind of somnambulistic sleep.

it takes on a demoniacal look, accompanied by a fitful laugh very much like that which Gounod gives to Mephistopheles in the opera of *Faust,* and which almost always precedes an important phenomenon. Sometimes her face flushes; the eyes become brilliant and liquid, and are opened wide. The smile and the motions are the mark of the erotic ecstasy. She says "*mio caro*" ("my dear"), leans her head upon the shoulder of her neighbor, and courts caresses when she believes that he is sympathetic. It is at this point that phenomena are produced, the success of which causes her agreeable and even voluptuous thrills. During this time her legs and her arms are in a state of marked tension, almost rigid, or even undergo convulsive contractions. Sometimes a tremor goes through her entire body.

To these states of nervous super-activity succeeds a period of depression characterized by an almost corpse-like paleness of the face (which is frequently covered with perspiration) and the almost complete inertia of her limbs. If she lifts her hand, it falls back of its own weight.

During the trance her eyes are turned up, and only the white is visible. Her presence of mind and her general consciousness are diminished or not at all in evidence. She gives no reply, or, if she does, her reply is retarded by questions. Eusapia has no recollection of what has taken place during the séances, except for states of mind bordering close on those of her normal state; and, consequently, they only relate, as a general thing, to phenomena of slight intensity.

In order to aid in the manifestations, she frequently asks that her force be increased by putting one more person in the chain. It has frequently happened to her to address a sympathetic spectator, to take his fingers and press them as if to draw something out of them, then push them abruptly away, saying that she has enough force.

In proportion as her trance increases, her sensibility to light increases. A sudden light causes difficulty in her breathing, rapid beatings of the heart, an hysterical feeling, general irritation of the nerves, pain in the head and eyes, and a trembling of the whole body, with convulsions,— except when she herself asks for light (a thing which frequently happens to her when there are interesting verifica-

tions to be made upon the subject of displaced objects), for then her attention is strongly called in other directions.

She is in constant motion during the active period of the séances. These movements may be attributed to the hysterical crises which then agitate her; but they appear to be necessary to the production of the phenomena. Every time that a movement is being caused at a distance, she imitates it, either with her hands or with her feet, and by developing a much stronger force than would be necessary for producing the movement by contact.

Here is what she herself says of her impressions when she wishes to produce a movement at a distance. *She suddenly experiences an ardent desire to produce the phenomena; then she has a feeling of numbness and the goose-flesh sensation in her fingers; these sensations keep increasing; at the same time she feels in the inferior portion of the vertebral column the flowing of a current which rapidly extends into her arm as far as her elbow, where it is gently arrested. It is at this point that the phenomenon takes place.*

During and after the levitations of the tables she has a feeling of pain in her knees; during and after other phenomena, in her elbows and all through her arms.

It was only in the end of February, 1891, that Professor Lombroso, whose curiosity had finally been strongly excited, decided to come to Naples to examine these curious manifestations about which everybody in Italy was speaking. The following reports by M. Ciolfi were published apropos of this visit.*

First Séance

A large room, selected on the first floor by these gentlemen, had been put at our disposal. M. Lombroso began by carefully examining the medium, after which we took places around a gaming table. Mme. Paladino sat at one end; at her left, MM. Lombroso and Gigli; I faced the medium, between MM. Gigli and Vizioli; then came MM. Ascensi and

* *Annales des sciences psychiques*, 181, p. 326.

Tamburini, who closed the circle, the last named at the right of the medium and in contact with her.

The room was lighted by candles placed upon a table behind Mme. Paladino. MM. Tamburini and Lombroso each held a hand of the medium. Their knees touched hers, at a certain distance from the feet of the table; and her feet were under theirs.

After a rather long wait the table began to move, slowly at first,— a matter explained by the scepticism, not to say the positively hostile spirit, of those who were this night in a séance circle for the first time. Then, little by little, the movements increased in intensity. M. Lombroso proved the levitation of the table, and estimated at twelve or fifteen pounds the resistance to the pressure which he had to make with his hands in order to overcome that levitation.

This phenomenon of a heavy body sustained in the air, off its centre of gravity and resisting a pressure of twelve or fifteen pounds, very much surprised and astonished the learned gentlemen, who attributed it to the action of an unknown magnetic force.

At my request, taps and scratchings were heard in the table. This was new cause for astonishment, and led the gentlemen to themselves call for the putting out of the candles in order to ascertain whether the intensity of the noises would be increased, as had been stated. All remained seated and in contact.

In a dim light which did not hinder the most careful surveillance, violent blows were first heard at the middle point of the table. Then a bell placed upon a round table, at the distance of a yard to the left of the medium (in such a way that she was placed behind and to the right of M. Lombroso), rose into the air, and went tinkling over the heads of the company, describing a circle around our table, where it finally came to rest.

In the midst of the expressions of deep amazement which this unexpected phenomenon drew forth, M. Lombroso showed a strong desire to hear and to prove it again. Whereupon the little bell began to sound, and again made the tour of the table, redoubling its strokes upon it, to such a degree that M. Ascensi, divided between astonishment and the fear of

having his fingers broken (the bell weighed fully ten ounces), hastened to rise and go and seat himself on a sofa behind me.

I kept insisting that we had to do with an intelligent force,— a matter that he persistently denied,— and that consequently there was nothing to fear. But M. Ascensi refused, under any circumstances, to take his place again at the table.

I called attention to the fact that the circle was broken, since one of the experimenters had left, and that, under penalty of no longer being able to observe the phenomena in a cool judicious spirit, it would be necessary that he should at least keep silent and motionless. M. Ascensi was very willing to pledge himself to that.

The light was extinguished, and the experiments began again. While, in response to a unanimous wish, the little bell was beginning again its tinklings and its mysterious aërial circuits, M. Ascensi, taking his cue, unknown to us, from M. Tamburini, went (unperceived, owing to the darkness), and stood at the right of the medium, and at once with a single scratch lighted a match, so successfully, as he declared, that he could *see the little bell, while it was vibrating in the air,* suddenly fall upon a bed about six feet and a half behind Mme. Paladino.

I will not attempt to depict for you the amazement of the learned body, the most striking manifestation of which was a rapid exchange of questions and comments upon this strange occurrence.

After some remarks I made about the intervention of M. Ascensi, who seemed likely to seriously trouble the psychic condition of the medium, the darkness was turned on again, so to speak, in order to continue the experiments.

At first it was a little work-table, small, but heavy, that moved about. It was placed at the left of Mme. Eusapia, and it was upon it that the little bell was placed at the beginning of the séance. This small piece of furniture struck against the chair on which M. Lombroso was seated, and *tried to hoist itself up* on our table.

In the presence of this new phenomenon, M. Vizioli gave up his place at our table to M. Ascensi and went to stand

between the work-table and Mme. Eusapia, to whom he turned his back. At least he said he did all this, for we could not see him on account of the darkness. He took the little table between his two hands and tried to hold it; but, *in spite of his efforts, it released itself* and went rolling over the floor.

An important point to note is that, although MM. Lombroso and Tamburini had not for a moment let go of the hands of Mme. Paladino, Professor Vizioli announced that he felt a pinch in the back. General hilarity followed this declaration.

M. Lombroso stated that he had felt his chair lifted up so that he was compelled to remain standing for some time, after which his chair had been so placed as to permit him to sit down again.

He also experienced twitches upon his clothes. Then he and M. Tamburini felt the touches of an invisible hand upon their cheeks and fingers.

M. Lombroso, especially struck with the two facts of the work-table and the little bell, judged them of sufficient importance for him to put off till Tuesday his departure from Naples, which had been first fixed for Monday.

Upon his request I promised a new séance, on Monday, at the Hôtel de Genève.

Second Séance

At eight o'clock in the evening I arrived at the Hôtel de Genève, accompanied by the medium, Eusapia Paladino. We were received under the colonnade by MM. Lombroso, Tamburini, Ascensi, and several other persons whom they had invited; namely Professors Gigli, Limoncelli, Vizioli, and Bianchi (superintendent of the insane asylum at Sales), Dr. Penta, and a young nephew of M. Lombroso, who lives at Naples.

After the customary introductions, we were asked to go up to the highest story in the house, where we were introduced into a very large room with an alcove. Curtains, or portières, were let down across the front of the alcove. Behind the curtains at a distance of about three feet and a half,

measured by MM. Lombroso and Tamburini, there was placed, in this alcove, a round table, with a porcelain salver filled with flour, in the hope of obtaining face-imprints in it. The alcove also contained a tin trumpet, writing-paper, and a sealed envelope containing a sheet of white paper, to see if we could not get *direct writing* on it.

The gentlemen inspected the alcove with extreme care, in order to assure themselves that there was nothing there of a fixed-up, suspicious nature.

Mme. Paladino sat down at the table, a little less than two feet from the alcove curtains, turning her back to them. Then, at her request, she had her body and her feet tied to her chair by means of cloth bands. This was effected by three members of the company, who left only her arms free. That done, places were taken at the table in the following order: on the left of Mme. Eusapia, M. Lombroso; then, in succession, M. Vizioli, myself, the nephew of M. Lombroso, MM. Gigli, Limoncelli, Tamburini; finally, Dr. Penta, who completed the circle and sat at the right of the medium.

MM. Ascensi and Bianchi refused to form part of the circle, and remained standing behind MM. Tamburini and Penta. I paid little attention to these two, being certain that their action was a premeditated combination in order to redouble the vigilance. I simply recommended that, while they were observing with extreme care, each should remain quiet.

The experiments began in candlelight strong enough to light up the whole room. After a long wait the table began to move, slowly at first, then more energetically. However, the movements remained intermittent, labored, and much less vigorous than at Saturday's séance.

The table volunteered a request by taps of its leg designating the letters of the alphabet, that MM. Limoncelli and Penta should exchange places. This exchange effected, the table called for the turning out of lights.

A moment after, and with more force this time, the movements of the table began again. Suddenly, in the midst of these, violent blows were heard. The chair placed at M. Lombroso's right tried to climb up on the table, then hung suspended upon the arm of the learned professor. All of

a sudden the curtains of the alcove were shaken, and swung forward over the table in such a way as to envelop M. Lombroso, who was very much moved by such a wonder, as he himself has declared.

All these phenomena, happening at long intervals, in the darkness, and in the midst of noisy conversation, were not estimated at their true worth. It was thought that they were only the effects of chance or were jests of some member of the company.

While we are all waiting and discussing the import of the phenomena and the greater or less value that should be set on them, the noise of the fall of an object is heard. When the room is lighted, there is found at our feet under the table the trumpet which had been placed on the round table in the alcove behind the curtains. This circumstance, which MM. Bianchi and Ascensi receive with a burst of laughter, surprises the experimenters, and has the effect of more completely fixing their attention.

The room is darkened again, and, by urgent request some fugitive glimmers of light are seen to appear and disappear at long intervals. This phenomenon impressed MM. Bianchi and Ascensi, and put an end to their incessant railleries, so much so that they came and formed a part of the circle. At the moment of the appearance of the gleams, and even some time after they had ceased to show themselves, MM. Limoncelli and Tamburini, at the right of the medium, said that they were touched in several places by a hand. M. Lombroso's young nephew, absolutely sceptical, who had taken a seat by the side of M. Limoncelli, declared that he felt the touch of a flesh-and-blood hand, and asked with some impetuosity who did that. He forgot — being not only sceptical, but artless — that, like himself, all the persons present were helping to form the chain of hands and were in mutual contact.

It was getting late, and the lack of homogeneity in the circle was abridging the phenomena. Under these conditions I thought I ought to end the séance and cause the candles to be lighted.

When MM. Limoncelli and Vizioli were taking leave, the medium being still seated and bound, and all of us were

standing around the table conversing about the luminous phenomena, and comparing the scattered and feeble effects obtained in this soirée with those of the Saturday preceding, and seeking the reason for this difference, we heard noise in the alcove, and saw the portières which enclosed it vigorously shaken, and the round table which was behind them slowly advancing toward Mme. Paladino, still seated and bound.

On seeing this strange, unexpected phenomena occur in full light, we were all stupefied with amazement. M. Bianchi and M. Lombroso's nephew dashed into the alcove, under the impression that some person concealed there was producing the movement of the portières and the round table. Their astonishment was unbounded when they ascertained that there was no one there, and that, under their very eyes, the table continued to glide over the floor in the direction of the medium. That is not all. Professor Lombroso observed that, while the table was in movement, the salver on it had been turned upside down without a single particle of the flour which it contained being spilled; and he added that no prestidigitator would have been able to accomplish such a feat. In the presence of these phenomena taking place as they did, after the breaking up of the circle, in such a way as to eliminate the hypothesis of a magnetic current, Professor Bianchi, in obedience to the love of truth, confessed that it was he who, for the sake of a joke, had contrived and brought about the fall of the tin trumpet, but that in the presence of such achievements as this he could no longer be sceptical, and was going to apply himself to the study of them in order to investigate their causes.

Professor Lombroso complained of the trick, and said to M. Bianchi that, as between professors met in order to make scientific studies and researches in common, mystifying pranks like this could not but cast a slur upon the respect due to science.

Professor Lombroso, who was a prey both to doubt and to ideas of his own which tormented his mind, made an engagement to be present at further meetings on his return to Naples in the following summer.

M. Ciolfi, having sent these two reports to M. Lombroso, the eminent professor of Turin confirmed their accuracy in the following letter, dated June 25, 1891:—

Dear Sir,— The two reports that you have sent me are of the utmost accuracy. I add that, before we had seen the salver turned over, the medium had announced that she would sprinkle the faces of those who sat by her with flour; and everything leads to the belief that such was her intention, but that she was not able to realize it,— a new proof, to my mind, of her perfect honesty, especially considering her semi-unconsciousness.

I am filled with confusion and regret that I combated with so much persistence the possibility of the facts called Spiritualistic. I say facts, because I am still opposed to the theory.

Please give my greetings to M. E. Chiaia, and, if it is possible, get M. Albini to examine the visual field and the inner recesses of the eye of the medium, about which I desire to inform myself.

Yours very truly,

C. Lombroso.

M. Lombroso soon after published his experiences and reflections, in an article in the *Annales des sciences psychiques* (1892) which ends thus:

None of these facts, (which we must admit, because no one can deny things which he has seen) is of such a nature as to lead us to form for their explanation an hypothesis of a world different from that admitted by the neuro-pathologists.

Above all, we must not forget that Mme. Eusapia is a neuropath; that in her childhood she received a blow on the left parietal bone, which produced a hole so deep that you could put your finger in it; that she remained subject to attacks of epilepsy, catalepsy, and hysteria, which take place especially during the séance phenomena; and that, finally, she has a remarkable obtuseness of touch.

Well, I do not see anything inadmissible in this,— that in the case of hypnotic and hysterical persons the excitation of certain centres, which become powerful by the paralysis of all the others and then provoke a transposition and a transmission of physical forces, may also produce a transformation in luminous force or in motive force. Thus we understand how the force in a medium which I shall call cortical or cerebral may, for example, lift the table, pull somebody's beard, hit him, caress him, etc.

During the transposition of senses due to hypnotism,— when, for example, the nose and the chin *see* (and that is a fact which I observed with my own eyes), and when for some moments all the other senses are paralyzed, the cortical centre of vision, which has its seat in the brain, acquires such an energy that it supersedes the eye. It is this which we have been able to prove, Ottolenghi and I, in the case of three hypnotized persons, by making use of the lens and of the prism.

The phenomena observed would be explained, according to this theory, by a *transformation* of the powers of the medium. Let us continue our account of the experiments.

Taking into consideration the testimony of Professor Lombroso, several savants — including MM. Schiaparelli, director of the observatory at Milan; Gerosa, professor of physics; Ermacora, doctor of natural philosophy; Aksakof, councillor of state to the Emperor of Russia; Charles du Prel, doctor of philosophy in Munich; Dr. Richet, of Paris, and Professor Buffern — met in October, 1892, in the apartment of M. Finzi, at Milan, to renew these experiments. M. Lombroso was present at several of the soirées. There were seventeen in all.

The experimenters present signed the following long declaration:

The results obtained did not always come up to our expectations. Not that we did not secure a large number of

facts apparently or really important and marvellous; but, in the greater number of cases, we were not able to apply the rules of experimental science which, in other fields of observation, are regarded as indispensable in order to arrive at certain and incontestable results. The most important of these rules consists in changing, one after the other, the methods of experiment, in such a way as to bring out the true cause, or at least the true conditions of all the events. Now it is precisely from this point of view that our experiments seem to us still incomplete.

It is very true that the medium, to prove her good faith, often voluntarily proposed to change some feature of one or the other experiment, and frequently herself took the initiative in these changes. But this applied only to things that were apparently indifferent, according to our way of seeing. On the contrary, the changes which seemed to us necessary to put the true character of the results beyond doubt, either were not accepted as possible or ended in uncertain results.

We do not believe we have the right to explain these things by the aid of insulting assumptions, which many still find to be the simplest explanation, and of which some journals have made themselves champions. We think, on the contrary, that these experiments are concerned with phenomena of an unknown nature, and we confess that we do not know what the conditions are that are required to produce them. To desire to fix these conditions in our own right and out of our own head would be as extravagant as to presume to make the experiment of Torricelli's barometer with a tube closed at the bottom, or to make electrostatic experiments in an atmosphere saturated with humidity, or to take a photograph by exposing the sensitive plate in full light before placing it in the camera. However, it is a fact that the impossibility of varying the experiments in our own way has diminished the worth and the interest of the results obtained, by depriving them of that rigorous demonstration which we are right in demanding in cases of this kind, or, rather, to which we ought to aspire.

The following are the principal phenomena observed.

Levitation of One Side of the Table

We agreed to have the medium sit alone at the table, in full light, her two hands placed on its upper surface and her sleeves drawn back to the elbows.

We remained standing about her, and the space above and under the table was well lighted. Under these conditions the table rose at an angle of twenty to forty degrees, and so remained for some minutes, while the medium was holding her legs stretched out and striking her feet one against the other. When we pressed with the hand upon the lifted side of the table, we experienced a considerable elastic resistance.

The table was suspended by one of its ends to a dynamometer which was coupled to a cord: this cord was tied to a small beam supported upon two wardrobes.

Under these conditions, the end of the table having been lifted six and a half inches, the dynamometer showed seventy-seven pounds. The medium sat at the same narrow end of the table, with her hands *wholly* on the table, to the right and the left of the point where the dynamometer was attached. Our hands formed the chain upon the table, without pressure: they would not have been able in any case to do more than *increase* the pressure brought to bear on the table. On the contrary, the desire was expressed that the pressure should diminish, and soon the table began to rise on the side of the dynamometer. M. Gerosa, who was following the marks on the apparatus, announced this diminution, expressed by the successive figures 7½, 4½, 2½, 0 (pounds). At the last the levitation was such that the dynamometer rested horizontally on the table.

Then we changed the conditions by putting our hands under the table. The medium, especially, put hers, not under the edge, where it might have touched the vertical border-board and exercised a push downwards, but *under the rail that unites the feet,* and touched this, not with the palm, but *with the back of the hand.* Thus all the hands together could only have diminished the traction upon the dynamometer. Upon the desire being expressed to see this traction augment, it increased from 7½ pounds to 13 pounds. Dur-

ing all these experiments each of the medium's feet rested under the foot of her nearest neighbor to right or left.

Complete Levitation of the Table.

It was natural to conclude that if the table, in apparent contradiction to the law of gravity, was able to rise partly, it would be able to rise entirely from the floor. As a matter of fact, this is what happened. *This levitation, one of the most frequent phenomena that occur in the experiments with Eusapia, stood a most satisfactory examination.*

The phenomenon always materialized under the following conditions: the persons seated about the table place their hands on it, and form the chain; each hand of the medium is held by the adjacent hand of her two neighbors; each of her feet remains under the feet of her neighbor, who also press her knees with theirs. She is seated, as usual, at one of the small ends of the table, *a position least favorable for a mechanical levitation.* At the end of several minutes the table makes a side movement, rises first to the right, then to the left, and finally mounts off of its four feet straight into the air, and lies there horizontally (as if it were floating on a liquid), ordinarily at a height of from 4 to 8 inches (in exceptional cases from 24 to 27 inches); then falls back and rests on its four feet. It frequently remains in the air for several seconds, and while there also makes undulatory motions, during which the position of the feet under the table can be thoroughly examined. During the levitation the right hand of the medium often leaves the table, as well as that of her neighbor, and is held in the air above.

In order the better to observe this thing, we removed one by one the persons placed at the table, recognizing the truth that the chain formed by several persons was neither necessary for this phenomenon nor for others. Finally, we left only a single person with the medium, seated at her left. This person placed her foot upon Eusapia's two feet and one hand upon her knees, and held with her other hand the left hand of the medium. Eusapia's right hand was on the table, in full view,— though sometimes she held it in the air during the levitation.

PLATE VIII. DRAWING FROM PHOTOGRAPH, SHOWING METHOD OF CONTROL BY PROFESSORS LOMBROSO AND RICHET OF EUSAPIA. TABLE COMPLETELY RAISED.

As the table remained in the air for several seconds, it was possible to obtain several photographs of the performance. Three pieces of photographic apparatus were working together in different parts of the room, and the illumination was furnished by a magnesium light at the opportune moment. Twenty photographs were obtained, some of which are excellent. Upon one of them (Pl. VIII) we see Professor Richet, who holds one hand, the knees, and a foot of the medium. The other hand of the latter is held by Professor Lombroso. The table is shown horizontally lifted,—a fact proved by the interval between the extremity of each foot and the extremity of the corresponding projected shadow.

In all the experiments which precede, we gave our attention principally to a careful inspection of the position of the hands and the feet of the medium; and, in this respect, *we believe we can say that they were safe from all criticism.* Still, a scrupulous sincerity compels us to mention the fact to which we did not begin to call attention before the evening of October 5, but which probably must have occurred also in the preceding experiments. It consists in this, that the four feet of the table could not be considered as perfectly isolated during the levitation, because one of them at least was in contact with the lower edge of the medium's dress.

On this evening it was remarked that a little before the levitation, Eusapia's skirt was inflated on the left side until it touched the foot of the nearest table. One of us having been charged with the duty of hindering this contact, the table was unable to rise as before, and it only did rise when the observer intentionally permitted the contact to take place. This is shown in the photographs taken during this experiment, and also in those in which the table-foot in question is visible (after a fashion) at its lower extremity. The reader will see that at the same time the medium had her hand placed upon the upper surface of the table, and on the same side, in such a way that this table-foot was under her influence, as much in its lower portion, by means of the dress, as in the upper portion, by means of the hand.

Now in what way is it possible for the contact of a light dress-stuff with the lower extremity of the foot of a table to assist in the levitation? That is something we do not know.

The hypothesis that the dress may conceal a solid support, skilfully introduced, which may serve as a temporary support for the foot of the table, is a very poor one.

In fact, to keep the whole table resting on this one foot through the influence that a single hand could produce upon the upper surface of the table would require that the hand exercise upon the table a very strong pressure, one that we cannot suppose Eusapia capable of, even during three or four seconds.

We convinced ourselves of this by ourselves making proof of it with the same table.*

Movements of Objects at a Distance, without Contact with Any of the Persons Present

1. Spontaneous movements of objects.

These phenomena were observed several times during our séances. It often happened that a chair, placed for this purpose not far from the table, between the medium and one of her neighbors, began to move about, and sometimes came up to the table. A remarkable instance occurred in the second séance, everything being *all the time in full light.* A heavy chair, weighing twenty-two pounds, which stood a yard from the table and behind the medium, came up to M. Schiaparelli, who was seated next the medium. He rose to put it back in its place; but scarcely was he seated when the chair advanced a second time toward him.

2. Movement of the table without contact.

* However, some doubt may remain. In my photographs, also (Pl. I. and VI.), the foot of the table at the left of the medium is concealed. As I myself was at this very place, I am sure that the medium was unable to lift the table with her foot, for *this foot was held under mine,* not by a rod or by any support whatever; for I had a hand upon her legs, *which did not move.* The objection is moreover refuted by the experiment which I made on the 29th of March, 1906 (see p. 6), of a levitation, with Eusapia standing,—an experiment which had been made before on the 27th of July, 1897, at Monfort-l'Amaury (see p. 82), the feet, very naturally, being visible. Hence there can be no doubt whatever about the complete levitation of the table floating in space. Aksakof obtained a levitation, in the séances at Milan, after having tied Eusapia's feet with two strings, the ends of which were short and had been sealed to the floor very near each foot.

Farther on the reader will be given proof of other undeniable instances, among others, at pp. 164, 165.

It was desirable to obtain this phenomenon as a matter of experiment. For that purpose, the table being placed upon casters, the feet of the medium were watched, as has been said, and all of the sitters formed the chain with their hands, including those of the medium. When the table began to move, we all lifted our hands, without breaking the chain, and the table thus isolated made several movements. This experiment was several times renewed.

The Fetching of Different Objects, the Hands of the Medium Being tied to those of her Neighbors.

In order to assure ourselves that we were not the victims of a trick, we tied the hands of the medium by a string to those of her two neighbors, in such a way that the movements of the four hands would reciprocally control each other. The length of the cord between the hands of the medium was from eight to twelve inches, and between each one of her hands and the hands of her neighbors four inches. This distance of space was purposely arranged in order that the hands of the neighboring persons might, in addition, readily hold those of the medium during the convulsive movements which usually agitate her.

The tying was done in the following way: we took three turns of the string around each wrist of the medium, without leaving any slack, but drawn so tightly as almost to give her pain,* and then we tied two simple knots. This was

* I hear very often the following objection: "I shall only believe in mediums who are not remunerated; all those who are paid are under suspicion." Eusapia belongs to these last. Being without fortune, she never visits a city unless her travelling and hotel expenses are paid. She also loses her time, and is submitted to a not very agreeable inquisition. For my part, I do not admit the above objection at all. The physical and intellectual faculties have nothing in common with money-getting. It will be said that the medium is interested in deceiving and tricking: it increases her fees. But there are a good many other temptations in the world. I have seen unpaid mediums, men and women of society, cheat without any scruple, from pure vanity, or for a purpose still less fit to be avowed,— for the mere pleasure of trapping some one. The séances of Spiritualism have been made to serve useful and agreeable ends in fashionable society — and more than one marriage has originated there.

We must be as sceptical about one class of mediums as about another.

done in order that, if by any artifice the hand was able to release itself from the string, the three turns would work against it and the hand could not get back again under the string as it was before.

A little bell was placed upon a chair behind her. The chain was formed, and her hands as well as her feet were held as usual. The room was darkened in answer to the request that the little bell should at once sound, after which we were to untie the medium. *Immediately* we heard the chair move, describe a curve upon the floor, approach the table, and presently place itself upon it. The bell rang, then was thrown upon the table. The light having been at once turned on, we ascertained that the knots of the string were in perfect order. It is clear that the fetching on of the chair was not produced by the action of the hands of the medium.

Impressions of Fingers obtained on Smoked Paper.

In order to decide if we had to do with a human hand.... or with any other way of dealing, we fixed a sheet of paper, blackened with the smoke of a lamp, upon the table, on the side opposite that of the medium, and expressed a wish that the hand would leave an impression on it, that the hand of the medium should remain unsoiled, and that the lampblack be transferred to the hands of one of us. The hands of the medium were held by those of MM. Schiaparelli and Du Prel. The chain was made in the darkness, then we heard a hand lightly tap upon the table, and presently M. Du Prel announced that his left hand, which he held on the right hand of M. Finzi, had had the sensation of fingers rubbing it. As soon as the room was lighted, we found upon the paper several imprints of fingers, and the back of M. Du Prel's hand was covered with lampblack; *but the hands of the medium, examined then and there, had no trace of it.* This experience was repeated three times. When we insisted upon having a complete impression, we obtained five fingers upon a second sheet of paper, and upon a third the impression of almost an entire left hand. After that the back of

M. Du Prel's hand was completely blackened, the hands of the medium remaining perfectly clean.

Apparition of Hands upon a Dimly Lighted Background

We placed upon the table a large cardboard covered with a phosphorescent substance (sulphide of calcium), and we placed other pieces of cardboard upon chairs in different parts of the chamber. Under such conditions we saw very plainly the outline of a hand imposed on the cardboard of the table. Upon the background formed by the other pieces we saw the shadow of the hand pass and repass around us.

On the evening of September 21 one of us several times saw the image, not of one, but of *two hands at once,* thrown upon the glass panes of a feebly illuminated window (outside it was night, but the darkness was not complete). These hands exhibited a rapid tremulous motion, but not so rapid as to hinder us from seeing the outline clearly. They were wholly opaque and were thrown upon the window as absolutely black silhouettes.

This simultaneous appearance of two hands is *very significant,* for they cannot be explained on the hypothesis of a trick of the medium, who would not have been able in any way to free more than one of her hands, owing to the surveillance of those who sat beside her. The same conclusion applies to the clapping of two hands, one against the other, which was several times heard in the air.

The Levitation of the Medium to the Top of the Table

We regard this levitation as among the most important and most significant of Spiritualistic achievements. It took place twice, on September 28 and October 3. The medium was seated at one end of the table, uttering deep groans, and was lifted up with her chair and placed upon the table, not moving from her position, those next her still holding her hands as she rose.

On the evening of September 28, while her two hands were held by MM. Richet and Lombroso, the medium complained of their grasping her under the arm. Then, in a state of

trance she said, with the changed voice which she usually has while in this state, "Now I bring up my medium upon the table." At the end of two or three seconds the chair, with the medium seated in it, was not thrown, but lifted with precaution and placed upon the table. MM. Richet and Lombroso are sure they did not assist her in this ascension. After she had spoken, being all the time in a state of trance, the medium announced her descent, and (M. Finzi being substituted for M. Lombroso) was placed upon the floor with care and precision, MM. Richet and Finzi following her movements without at all assisting them.

Moreover, during the descent, both gentlemen felt a hand touching them lightly several times upon the head. On the evening of October 3 the same phenomenon was repeated in similar circumstances.

Touchings

Some of these merit particular notice, owing to a circumstance capable of giving us an interesting notion of their possible origin. Our first business is to describe the touchings which were felt by persons beyond the reach of the hands of the medium. Thus, on the evening of October 6, M. Gerosa, who was separated from the medium by three places (about four feet, the medium being a little to one side and M. Gerosa in one of the adjacent corners at the opposite short end of the table), having lifted his hand that it might be touched, felt a hand strike his own several times to make him lower it; and, as he persisted, he was hit with a trumpet, which an instant before had been making sounds in the air.

In the second place, we must note touchings which constitute very delicate operations, and which cannot be made in the darkness with the precision which we have noted in them. Twice (on September 16 and 21) M. Schiaparelli had his spectacles removed from his nose and laid down on the table before another person. These glasses are fixed to the ears by means of two springs, and a certain amount of attention is necessary in order to remove them, even to one working in full light. Yet they were removed in complete

darkness with so much delicacy and promptness that the said experimenter only perceived the loss of them when he no longer had the usual feeling of them on his nose, on his temples, and behind his ears, and he was obliged to feel with his hands in order to be sure that they were no longer in their usual place.

Many other touchings produced similar effects, and were executed with extreme delicacy; for example, when one of the company felt his hair and beard stroked.

In all of the innumerable manœuvres executed by mysterious hands, there was never any awkward stumbling or collision to be noted, though ordinarily this is inevitable when one is working in the dark. I may add, in this connection, that bodies tolerably heavy and bulky, such as chairs and vessels full of clay, were deposited upon the table without having collided with any of the numerous hands resting upon the table,— a particularly difficult thing in the case of chairs which, owing to their dimensions, occupied a large part of the table. A chair was turned over on its face upon the table and lay there at full length without causing the least annoyance to anybody; and yet it covered almost the entire surface.

Contact with a Human Face

One of us having expressed the wish to be kissed, felt before his very mouth the peculiar quick sounds of a kiss, but not accompanied by any contact of lips. This happened twice. On three different occasions one of the experimenters felt the touch of a face with hair and beard. The feeling of the skin was exactly that of a living man. The hair was much coarser and more bristly than that of the medium, and the beard seemed very soft and delicate.

Such are the experiments made at Milan in 1892 by the group of savants cited above.

How can we help admitting, after the reading of this new official report, the following things?

1. The complete levitation of the tables.
2. The levitation of the medium.

3. The movement of objects without contact.

4. Accurate and delicate touches made by invisible organs.

5. The formation of hands and even of human figures.

These phenomena take their place in this book as things which were observed with the most scrupulous care.

Let us note also the action of the little piece of furniture (chair or round table), which tries to climb up on one of the company or upon the large table,— a thing also observed by myself.

Although the savants of the Milan group regretted that they did not make *experiments,* but only *observations* (I said above (p. 20), what we ought to think about this), the facts were none the less proved.

I will add that after the reading of this *procès-verbal,* the cautious reserves of M. Schiaparelli seem exaggerated. If fraud has sometimes crept in, still what has been accurately observed remains safe and sound and is an acquisition to science.

Our medium, Eusapia, has been the subject of a fruitful series of experiments. Let me also mention those of Naples in 1893, under the direction of M. Wagner, Professor of Zoölogy at the University of St. Petersburg; that of Rome in 1893–1894, under the direction of M. de Siemiradski, correspondent of the Institute; those of Varsovie, from the 25th of November, 1893, to the 15th of January, 1894, at the house of Dr. Ochorowicz; those of Carqueiranne and of l'île Roubaud, in 1894, at the house of Professor Richet; those of Cambridge in August, 1895, at the house of Mr. Myers; those of the villa de l'Agnellas, from the 20th to the 29th of September, 1895, at the house of Colonel de Rochas; those of Auteuil, in September, 1896, at the house of M. Marcel Mangin, etc. It would be entirely superfluous and

an unconscionably long task to analyze them all. Let us merely select some special characteristic instances.

In the report of M. de Siemiradski we read as follows:

In the corner of the hall there was a piano, placed to the left of Ochorowicz and Eusapia, and a little in the rear. Some one desired to hear the keyboard touched. We at once hear the moving of the piano. Ochorowicz can even see the displacement, thanks to a ray of light which falls upon the polished surface of the instrument through the window shutters. The piano then opens noisily, and we hear the bass notes of the keyboard sounding. I utter aloud my desire to hear high notes and low notes touched at the same time, as a proof that the unknown force can act at the two ends of the keyboard. My wish is granted, and we hear bass notes and treble notes sounded at the same time, which seems to prove the action of two distinct hands. Then *the instrument advances toward us.* It presses against our group, and we are obliged to get up and move back with our experiment table, and we do not stop until we have thus moved back several yards.

A glass half full of water, which stands on a buffet, out of reach of our hands, was carried by an unknown power to the lips of Ochorowicz, Eusapia, and another person, who all drank of it. This performance took place in complete darkness and with astonishing precision.

We were able to prove the existence of a real hand not belonging to any one present. We did it by means of the plaster cast and mould, as follows:

Having placed a heavy basin filled with modelling-clay upon the large table in the middle of the dining-room, we sat down with Eusapia around the little experiment-table more than a yard distant. After some minutes of waiting, the basin came of itself and stood on our table! Eusapia groaned, writhed, and trembled in all her limbs; yet not for a moment did her hands quit ours. Then she cried, "*E fatto*" ("It is done"). The candle is lighted again, and we find an irregular hollowed place upon the surface of the clay. This hollow place, afterward filled with plaster, gives us a perfect cast of the contracted fingers of a hand.

We placed upon the table a plate smeared with lampblack. The mysterious hand left there the print of the end of its fingers. The hands of the experimenters, including those of Eusapia, *remained white.* We next induced the medium to reproduce the impression of her own hand upon another lamp-smoked plate. She did so. The layer of soot removed by her fingers had deeply blackened them. A comparison of the two plates enabled us to prove a striking resemblance,— that is to say (to speak more accurately), the identity of the arrangement of the spiral circles in the epidermis of the two hands; and we know that the arrangement of these circles is unique in every individual. This is a particular which speaks eloquently in favor of the hypothesis of the double personality of the medium.

In order mechanically to control the movements of Eusapia's feet, Dr. Ochorowicz employed the following piece of apparatus. Two deep and narrow cigar-boxes were placed under the table, and Eusapia put her unshod feet into them. The boxes had double bottoms and were provided with an electrical arrangement of such a nature that she could move her feet freely for some inches in every direction; but, if she wished to withdraw them from the box, the electric bell tinkled before she had moved them half way to the top, and only stopped when they were returned to their place. Eusapia cannot remain utterly quiet during the séances. So she was given a certain freedom of movement; but it was impossible for her to make use of her legs for lifting the table. *Under these conditions the table, weighing twenty-five pounds, rose up twice without the bell being heard.* During the second levitation the table was photographed underneath. (The four feet of the table are seen in the photograph. The left is in contact with Eusapia's dress, as is always the case when the light is strong; but the boxes holding the feet of the medium are in their place.) Then the experimenters verified the fact that the

bell was heard, not only when she removed her foot, but when she lifted it too high in the box.

After all these demonstrations, I will not do my readers the wrong of thinking that the levitation of the table is not MORE THAN PROVED for all of them.

Here, now, is a curious observation relative to the inflation of the curtain: Ten persons were seated around the table. Eusapia had her back turned to the curtain; she was controlled by General Starynkiewicz and Dr. Watraszewski.

I was seated (writes M. Glowacki-Prus) opposite Eusapia, near Mlle. X., a very nervous person and easily hypnotized. The séance had lasted for about an hour, with numerous and varied phenomena. Eusapia, as always, was in a semi-conscious state. Suddenly she awoke, and Mlle. X. uttered a cry. Knowing what this cry meant, I grasped her hand with great force and then put my arm about her; for this girl becomes very strong in certain states. The room was well lighted, and this is what we saw (something, be it noted, which I myself experienced by my hands). Every time that the muscles of Mlle. X. became more tense and rigid, the curtain which hung opposite her, at a distance of from seven to ten feet, made a movement. The following table indicates the details of this correlation:

Feeble tension of the muscles ..	The curtain is set in motion.
Strong tension	It bellies out like a sail.
Very strong tension, cries	It reaches as far as Eusapia's controllers, and almost wholly covers them.
Repose	Repose.
Tension of the muscles	Movement of the curtain.
Strong tension	Strong inflation of the curtain.

This tabular view presents the striking proportion which I ascertained between the tension of the medium's muscles

(who in this case was Mlle. X.) and the mechanical work of the curtain in movement.

This experiment is so much the more interesting since it was not Eusapia who made it; and, if she had a trick for inflating the portières, it was not employed in this case. We already know that she had none.

Here are the conclusions of M. Ochorowicz:

1. I did not find any proofs in favor of the Spiritualistic hypothesis; that is to say, in favor of the intervention of an intelligence other than that of the medium. "John" is for me only a psychic double of the medium. Consequently, I am not a Spiritualist.

2. Mediumistic phenomena are confirmatory of "magnetism" as opposed to "hypnotism"; that is to say, they imply the existence of a fluidic action apart from suggestion.

3. Still, suggestion plays an important rôle in them, and the medium is only a mirror reflecting the forces and the ideas of those present. Moreover, she possesses the power of realizing her own somnambulistic visions or those suggested by the company, simply by the process of externalizing them.

4. No purely physical force explains these phenomena, which are always of a psycho-physical nature, having a centre of action in the mind of the medium.

5. The phenomena proved do not contradict either mechanics in general or the law of the conservation of forces in particular. The medium acts at the expense of her own proper powers and at the expense of those of the persons present.

6. There exists a series of transitions between mediumship of an inferior kind (automatism, unconscious fraud) and mediumship of a superior kind or externalization of motivity (action at a distance without visible and palpable connecting link).

7. The hypothesis of a "fluidic double" (astral body), which, under certain conditions, detaches itself and acts independently of the body of the medium, seems necessary for

the explanation of the greater part of the phenomena. According to this conception, the moving of objects without contact would be produced by the fluidic limbs of the medium.*

Sir Oliver Lodge, an eminent English physicist, rector of the University of Birmingham, says that, on the invitation of Dr. Richet, he went to attend the experiments at Carqueiranne, thoroughly convinced that he should not see there any instance of physical movement without contact; but that what he saw completely convinced him that phenomena of that kind can have, under certain conditions, a real and objective existence. He vouches for the following verified facts:

1. Movements of a chair at a distance, seen by the light of the moon, and in circumstances which proved that there was no mechanical connection.
2. The inflation and the movement of a curtain in the absence of wind or of any other ostensible cause.
3. The automatic winding up and moving about of a music-box.
4. Sounds proceeding from a piano and from an accordion which had not been touched.
5. A key turned in a lock, on the inside of the room where the séances were held, then placed upon the table, and again put back into the lock.
6. The overturning, by means of slow and correct evolutions, of a heavy moving table, which was afterwards found thus turned upside down.
7. The levitation of a heavy table, under conditions in which it would have been impossible to lift it in ordinary circumstances.
8. The appearance of blue marks upon a table previously spotless, and this done without the help of the ordinary methods of writing.
9. The sensation of blows, as if some one were striking the

* These reports were published in detail in the work of M. de Rochas on *The Externalization of Motivity*, 4th edition, 1906, p. 170.

head, the arms, or the back, while the head, the hands, and the feet of the medium were plainly in view or held apart from the portions of the body that were touched.

It is plain enough what part the above statements play in our argument. They are throughout simply confirmations of the experiments described above.

At Cambridge, Eusapia was taken in the very act of deception; namely, the substitution of hands. While the controllers believed that they were holding her two hands, they were only holding one of them: the other was free. So these experimenters at Cambridge unanimously declared that "everything was fraud, from the beginning to the end," in Eusapia Paladino's *twenty séances.*

In a paper sent to M. de Rochas, M. Ochorowicz contested this radical conclusion, for several reasons. Eusapia is very susceptible to suggestion, and, by indulging her inclination to fraud and not hindering it, they incite her to it still more by a kind of tacit encouragement. Moreover, her fraud is generally of an unconscious kind. I append here, as a particular illustration of this, a rather typical story about her:

One evening, at Varsovie (says M. Ochorowicz), Eusapia is sleeping in her chamber by the side of ours. I have not yet gone to sleep, when suddenly I hear her rising and moving about with bare feet in the drawing-room. Then she enters her chamber again and approaches our door. I make a sign to Mme. Ochorowicz, who has waked up, to be quiet and to observe carefully what is going to take place. A moment after, Eusapia gently opens the door, comes up to my wife's toilet-table, opens a drawer, shuts it, and goes away, carefully avoiding making any noise. I hastily dress myself and we enter her chamber. Eusapia is quietly sleeping. The light of our candle seems to wake her.

"What were you hunting for in our sleeping-room?"

"I? I haven't left this place."

Seeing the uselessness of further questions, we go to bed again, advising her to sleep quietly.

Next day I ask her the same question. She is very much astonished and even troubled (she blushes slightly).

"How should I dare," said she, "to enter your chamber during the night?"

This accusation is very painful to her, and she tries to persuade us by all kinds of insufficient reasons that we are wrong. She denies the whole thing, and I am obliged to admit that she does not remember getting up or *even having conversed with us* (it was just another somnambulistic state).

I take a little table, and direct Eusapia to put her hands on it.

"Very well," says she, "John will tell you that I don't lie."

I then ask the following questions:

"Is it you, John, who came into our sleeping chamber last night?"

"No."

"Was it the chambermaid?" (I suggest this idea for the express purpose of testing John's veracity.)

"No," says he.

"Was it the medium herself?"

"Yes," says the table.—"No, it is not true," exclaims Eusapia, seeing her hope banished—"Yes," replies the table, forcibly.

"Was she in the trance state?"

"No."

"In her normal state?"

"No."

"In a spontaneous somnambulistic state?"

"Yes."

"For what purpose?"

"*She was hunting matches; for she was frightened in her sleep, and didn't want to sleep without light.*"

Sure enough, there were always matches in the drawer opened by Eusapia, except on this particular night. She therefore returned without getting any.

While listening to the explanation of the table, Eusapia shrugged her shoulders, but protested no longer.

Here, then, is a woman who, from time to time, has the power of passing from one psychical state to another. Is it just to accuse such a creature of premeditated fraud, without the slightest medical and psychological examination, without the least attempt at verification? . . .

M. Ochorowicz adds here that, so far as he is concerned, the phenomena are not produced by a personality different from that of the medium, nor by a new independent occult force; but it is a special psychic condition which permits the vital *dynamism of the medium* (the astral body of the occultists) *to act at a distance,* under certain exceptional conditions. It is the only hypothesis which seems *necessary in the actual state of our knowledge.*

Why does the medium so often try to release her hand? So far as the Cambridge experimenters are concerned, the cause is very simple and always the same: she releases her hand in order to indulge in tricks. As a matter of fact, the reasons why she frees her hand are many and complicated.

Dr. Ochorowicz's explanations are as follows:

1. Let me observe, in the first place, that Eusapia frequently releases her hand for no other reason than to touch her head, which is in pain at the moment of the manifestations. It is a natural reflex movement; and, in her case, it is a fixed habit. Since, more often than not, she does not notice that she is doing it, or at least fails to give warning to her controller, the darkness justifies suspicions.

2. Immediately before the mediumistic doubling of her personality, her hand is affected with hyperæsthesia and, consequently, the pressure of the hand of another makes her ill, especially in the dorsal quarter. She then most frequently places the hand which is to be mediumistically active *above* and not below that of the controller, trying to touch it as little as possible. When the doubling of the personality is complete, and the dynamic hand more or less

materialized, that of the medium contracts and rests heavily upon the controller, exactly at the moment that the phenomenon takes place. She is then almost insensible and all shrunken together. In very good mediumistic conditions the doubling is easy and the initial hyperæsthesia of short duration. In this case the medium allows her hand to be completely covered and the feet of the controllers to be *upon* hers, as was always the case in our séances at Rome in 1893; but, since that time, she can no longer endure that position, and rather prefers to be held by hands under the table.

3. In accordance with psychological laws, the hand always proceeds automatically in the direction of our thoughts (Cumberlandism). The medium acts by auto-suggestion, and the order to go as far as an indicated point is given by her brain simultaneously to the dynamic hand and the corporeal hand, since in the normal state they form only one. And since, immediately after the hyperæsthesia, the muscular sensation is excited and the hand grows benumbed, it sometimes happens (especially when the medium proceeds carelessly and does not properly govern her movements) that the dynamic hand remains in place, while her own hand goes in the indicated direction. The former, not being yet materialized, produces only a semblance of pressure; and another person, able to see a little in the darkness, will perceive nothing of it, and will even be able to ascertain by touch the absence of the medium's hand from that of the controller. At the same time the hand of the medium is going in the direction of the object; and *still it may happen that it does not really reach it, acting, as it does, at a distance, by a dynamic prolongation.*

It is in this way that I explain the cases in which the hand, being released, has not yet been able to reach the point aimed at (physically inaccessible), as well as the numerous experiments made at Varsovie in full light, with a little bell hung in different ways, with compasses of different forms, with a very small table, etc.,— experiments in which Eusapia's fingers were quite near, but did not touch, the object. I proved that there was no electric force at work in these cases, but that things occurred as if the arms of the medium were lengthened and acted invisibly, but *me-*

chanically. At Varsovie, when one of my friends M. Glowacki, took it into his head "that it was necessary to give the medium free rein, in order to discover her method," we had an entirely fraudulent séance and lost our time to no purpose. On the contrary, in a poor séance at l'île Roubaud, we obtained some good phenomena after having frankly told the medium that she was cheating.

And here are the conclusions of the author upon "the Cambridge frauds":

1. Not only was *conscious* fraud not proved on Eusapia at Cambridge, but not the slightest effort was made to do so.
2. *Unconscious* fraud was proved in much larger proportions than in all the preceding experiments.
3. This negative result is vindicated by a blundering method little in accordance with the nature of the phenomena.

Such is also the opinion of Dr. J. Maxwell, and of all who are competent judges of the question.

To sum up, we see that the influence of preconceived ideas, opinions, and sentiments, upon the production of phenomena, is certain. When all the experimenters have nearly the same sympathetic inclination for this kind of research, and when they have decided to exercise sufficient "control" (that is, watchful oversight) not to be the dupe of any mystification, and agree among themselves to accept the regrettable conditions of darkness necessary to the activity of these unknown radiations, and not to trouble in any way the apparent exigencies of the medium, then the resulting phenomena attain an extraordinary degree of intensity.*

* I will add, for the benefit of those who wish to try some of these psychic experiments, that the best conditions for success are to have a homogeneous, impartial, and sincere group, free from every preconceived idea, and not exceeding five or six persons in number. It is absurd to object that, in order to obtain the phenomena, *one must have faith.* But, while positive belief is not necessary, it is yet advisable not to exercise any hostile influence during a séance.

But if discord reigns, if one or more of the company persistently spy upon the acts of the medium, with the conviction that he or she must be cheating, the results are very much like the progress of a sailing vessel impelled by several contrary winds. The medium simply marks time without advancing; and little but sterile results are secured. *Psychic forces are no less real than physical or chemical or mechanical forces.* In spite of the desire that we may have to convince prejudiced sceptics, it is advisable to invite only one of them at a time, and to place him next to the medium, in order that he may be at once astonished, shaken, and convinced. But in general this is not worth the trouble.

In the month of September, 1895, a new series of experiments was made at l'Agnélas, in the residence of Colonel de Rochas, president of the polytechnic school, with the assistance of Dr. Dariex, editor of the *Annales des sciences psychiques,* Count de Gramont (doctor of science), Dr. J. Maxwell, deputy of the attorney-general at the Court of Appeals in Limoges, Professor Sabatier, of the faculty of sciences at Montpellier, and Baron de Watteville, a licentiate in science. They confirmed all the preceding details.*

A similar series was held in September, 1896, at Tremezzo, in the rooms of the Blech family, then in summer residence at Lake Como; again at Auteuil, at the home of M. Marcel Mangin, with MM. Sully-Prudhomme, Dr. Dariex, Emile Desbeaux, A. Guerronnan, and Mme. Boisseaux also participating. Let us stop for a moment to glance at this last séance.

* A very curious experiment made with a letter-weigher took place at l'Agnélas. In response to an impromptu suggestion made by M. de Gramont, Eusapia consented to try whether, by making vertical passes with her hands on each side of the tray of the letter-weigher (going as high as fifty grams), she could not lower it. She succeeded in doing so several times in succession, in the presence of five observers placed about her, who testified that she did not have in her fingers either thread or hair to press upon the tray.

I will first mention the photograph of the table suspended in the air, a levitation which did not leave any doubt in the mind of the experimenters, any more than it does in that of the observer who examines with attention this photograph (Pl. IX). The table descended slowly and the succession of images was registered by the photograph (same plate, Cut B). The following is an extract from the report by M. de Rochas upon this séance and the succeeding one:

September 21.— The table rises off its four feet. M. Guerronnan has time to take a photograph of it, but he fears that it may not be good. We beg Eusapia to begin again. She consents with good grace. The table is again lifted off its four feet. M. Mangin notifies M. Guerronnan who, from his post, could not see, and the table remains in the air until he has had time to take a picture of it (from three to four seconds at the most). The dazzling magnesium light enables us all to verify the reality of the phenomenon.

The curtain, hung in the corner of the room, suddenly blows out and covers my head. Then I feel in succession three pressures of a hand upon my head, the pressures growing stronger and stronger. I feel fingers which press as those of M. Sully-Prudhomme, my neighbor on the right, might do. I hold his left hand as a part of the chain of hands.

It is a hand, it is fingers, which have just pressed upon me so; but whose? I have continually had Eusapia's right hand upon my left hand, which she seized and tightly held at the moment of the production of the phenomenon.

. . .

I throw back the curtain, which has remained upon my head, and we sit waiting. "*Meno luce*" ("less light") asks Eusapia. The lamp is turned down more, and the remaining light shut off by a screen.

Facing me there is a window with closed outside shutters, but through which filters the light of the street. In

PHOTOGRAPH OF TABLE SUSPENDED.

THE TABLE FALLEN BACK.

the silence, my attention is caught by the appearance of a hand, the small hand of a woman. I can see it, owing to the feeble light coming from the window.

It is not the shadow of a hand: it is a hand of flesh (I do not add "and of bone," for I have the impression that it has no bones). This hand opens and closes three times, sufficiently long to permit me to say:

"Whose hand is this? — yours, Monsieur Mangin?"

"No."

"Then it is a materialization?"

"Undoubtedly: if you hold the medium's right hand, I hold the other."

I had the *right hand* of Eusapia on my left hand, and *her fingers were interlaced with mine.*

Now the hand which I saw was a *right hand,* stretched out and presented in profile. It remained for a moment motionless in the air, at about from twenty-four to twenty-eight inches above the table and thirty-six inches from Eusapia. As its immobility (I suppose) was the cause of my not seeing it, it therefore opened and closed: it was these movements which attracted my attention.

My favorable position in respect to the window, unfortunately permitted me alone to see this mysterious hand; but M. Mangin saw, at two separate times, not a hand, but the shadow of a hand outlined in profile upon the opposite window.

Eusapia turns her head in the direction of the curtain, behind which there is a leather-covered easy-chair, and, displacing the curtain, this chair comes and leans against me.

She takes my left hand, lifts it above the table the whole length of her right arm, and makes the feint of rapping in the air: the echo of three blows is heard on the table.

A little bell is placed before her. She stretches out her two hands to the right and the left of the bell at a distance of from three to four inches; then she draws back her hands toward her body, and, lo and behold! the bell comes gliding along over the table until it bumps against something and falls over. Eusapia repeats the experiment several times. You would think that her hands were invisibly prolonged; and that seems to me to justify the term "ectenic force,"

which Professor Thury, of Geneva, gave in the year 1855 to this unknown energy.

I was just asking if she did not perchance have some invisible thread between her fingers, when suddenly, an irresistible itching made her put her left hand to her nose; her right had remained upon the table near the bell; the two hands at this moment were about two feet apart. I observed carefully. Eusapia rested her left hand upon the table, some inches from the bell, and this was again set in motion. Considering the gesture made by her, it would have been necessary, in order to perform this feat, to have a wonderfully elastic thread, absolutely invisible; for our eyes were, so to speak, upon the bell, and the light was abundant. My eyes were only a foot distant from the bell, at the utmost.

This was a certain and undeniable case, and Sully-Prudhomme returned to his home with me as thoroughly convinced as I am.

The poet of *Solitudes* and of *Justice,* wrote on his part, as follows:

After a rather long wait, an architect's stool came marching up all alone toward me. It grazed my left side, rose to the height of the table, and succeeded in placing itself upon it. As I lifted my hand, I felt it at once seized.

"Why do you take my hand?" I asked of my neighbor.

"It was not I," said he.

While these phenomena were taking place, Eusapia seemed to be suffering. It seemed as if out of her own physiological fund or stock she were furnishing all the force required to put the objects in motion.

After the séance, while she was still very much prostrated, we saw an easy-chair which was behind the curtain come rolling up behind her, as if to say, "Hold on there! you've forgotten me!"

My conviction is that I witnessed phenomena which I cannot relate to any ordinary physical law. My impression is that fraud, in any case, is more than improbable,—at least so far as concerns the displacement at a distance of

heavy articles of furniture arranged by my companions and myself. That is all that I can say about it. For my part, I call "natural" that which is scientifically proved. So that the word "mysterious" means that which still astonishes us because it cannot be explained. I believe that the scientific spirit consists in verifying facts, in not denying *a priori* any fact which is not in contradiction with known laws, and in accepting none which has not been determined by safe and verifiable conditions.

Séance of September 26.— A dark bust moves forward upon the table, coming from where Eusapia sits; then another, and still another. "They look like Chinese ghosts," says M. Mangin, with this difference, that I, who am better placed, owing to the light from the window, am able to perceive the dimensions of these singular images, and above all their *thickness*. All these black busts are busts of women, of life size; but, although vague, they do not look like Eusapia. The last of them, of fine shape, is that of a woman who seems young and pretty. These half-lengths, which seem to emanate from the medium, glide along between us; and, when they have gone as far as the middle of the table or two-thirds of its length, they sink down altogether (all of a piece, as it were), and vanish. This rigidity makes me think of the reproductions, or fac-similes, of a bust escaped from a sculptor's atelier, and I murmur, "One would think he was looking at busts moulded in papier-maché." Eusapia heard me. "No, not papier-maché," she says indignantly. She does not give any other explanation, but says (this time in Italian), "In order to prove to you that it is not the body of the medium, I am going to show you a man with a beard. Attention!" I do not see anything, but Dr. Dariex feels his face rubbed against for quite a while by a beard.

New experiments made at Genoa in 1901, at which Eurico Morselli, professor of psychology at the University of Genoa, was present, were reported by my learned friend the astronomer Porro, successively director of the observatories of Genoa and Turin, to-day director of the national observa-

tory of the Argentine Republic at La Plata. Here are some extracts from this report:*

Nearly ten years have passed since Eusapia Paladino made her first appearance in the memorable séances at Milan during the course of her mediumistic tours through Europe. The object of shrewd investigations on the part of experienced and learned observers; the butt of jokes, accusations, sarcasms; exalted by certain fanatics as a personification of supernatural powers and scoffed at by others as a mountebank,— the humble haberdasher of Naples has made so much stir in the world that she is herself bored and displeased by it.

I had good proof of this when I took leave of her, after I had listened with much curiosity to the anecdotes which she related to me of her séances and of the well-known men with whom she has been associated,— Ch. Richet, Schiaparelli, Lombroso, Flammarion, Sardou, Aksakof, et al. She then very emphatically asked me not to speak in the journals of her presence at Genoa and of the experiments in which she should figure there. Happily, she has good reasons herself for not reading the journals.†

Why was an astronomer chosen to give an account of the experiments at Genoa? Because astronomers are occupied with researches into the unknown.‡

If a man absorbed in his own private studies and attached to an austere and laborious manner of life, such as my venerated master M. Schiaparelli, has not hesitated to defy the irreverent jests of the comic journals, it behooves us to conclude that the bond between the science of the heavens and that of the human soul is more intimate than appears. The following is the most probable explanation. We have to do in these studies with phenomena which are manifested under wholly special and still undetermined conditions, in con-

* Published by C. de Vesme in his *Revue des Études psychiques*, 1901.

† Eusapia, as has been said, is unable either to read or write.

‡ Arago, in 1846, with the "electric girl"; Flammarion, in 1861, with Allan Kardec, then afterwards with different mediums; Zöllner, in 1882, with Slade; Schiaparelli, in 1892 with Eusapia; Porro, in 1901, with the same medium (*Revue des Études psychiques*).

formity with laws almost unknown and, in any case, of such a character that the will of the experimenter has but little influence upon the unshackled, self-regulating, and often adverse volitions which betray themselves at every moment in the study of these psychical marvels. Nobody is better prepared to study these things than an astronomer, possessing, as he does, a scientific education precisely adapting him to the investigation of such conditions. In fact, by the systematic observation of the movements of the heavenly bodies, the astronomer contracts the habit of being a vigilant and patient spectator of phenomena, without attempting either to arrest or to accelerate their irresistible development. In other words, the study of the stars belongs to the science of *observation* rather than to that of *experiment.*

Professor Porro then sets forth the actual state of the question relating to mediumistic phenomena.

The explanation that everything is fraud, conscious or unconscious [says he], is to-day almost entirely abandoned, as much so as that which supposes that all is hallucination. In fact, neither one nor the other of these hypotheses is sufficient to throw light upon the observed facts. The hypothesis of unconscious automatic action on the part of the medium has not obtained any better fate; for the most rigorous controls have only proved that the medium finds it impossible to excite a direct dynamic effect. Physio-psychology has therefore been obliged, in these latter years, to have recourse to a supreme hypothesis, by accepting the theories of M. de Rochas, against which they had heretofore directed the fire of their heaviest guns. It has become resigned to the admission that a medium whose limbs are held motionless by a rigorous control may, under certain conditions, project outside of herself, to a distance of several yards, a force sufficient to produce certain phenomena of movement in inanimate bodies.

The boldest partisans of this hypothesis go so far as to accept the temporary creation of pseudo-human limbs,— arms, legs, heads,— in the formation of which the energies

of other persons present probably co-operate with those of the medium. The theory is that as soon as the energizing power of the medium is withdrawn these phantom dynamic limbs at once dissolve and disappear.

For all that, we do not yet go so far as to admit the existence of free and independent beings who would be able to exercise their powers only through the human organism; and still less do we admit the existence of spirits who once animated the forms of human beings. . . .

M. Porro openly declares that, for his part, he is neither a materialist nor a Spiritualist: He says that he is not ready to accept, *a priori,* either the negations of psychophysiology or the faith of Spiritualists.

He adds that the nine persons who were present with him at the séances represented the greatest variety of opinions on the subject, from the most firmly persuaded Spiritualists to the most incorrigible sceptics. Moreover, his task was not that of writing an official report, approved by all the experimenters, but solely that of faithfully relating his own impressions.

The following are the *most important* of these, selected from his reports on the different séances:

I saw, and plainly saw, the rough deal table (a table a yard long and nearly two feet wide and resting on four feet) rise up several times from the floor and, without any contact with visible objects, remain suspended in the air, several inches above the floor, during the space of two, three, and even four seconds.

This experiment was renewed *in full light* without the hands of the medium and of the five persons who formed the chain about the table touching the latter in any way. Eusapia's hands were looked after by her neighbors, who controlled also her legs and her feet in such a way that no part of her body was able to exercise the least pressure for the lifting or maintaining in the air of the rather heavy article of furniture used in the experiments.

It was under such absolutely trustworthy conditions as these that I was able to see inflated *a very thick piece of black cloth* and the red curtains which were behind the medium, and which served to close the embrasure of the window. The casement was carefully closed, there was no current of air in the room, and it is absurd to suppose that persons were hidden in the embrasure of the window. I believe, then, that I can affirm with the utmost confidence that *a force,* analogous to that which had produced the levitation of the table, was manifested in the curtains, *inflated them, shook them, and pushed them* out in such a way that they touched now one and now another of the company.

During the sitting an event took place which deserves to be mentioned as a proof, or at least as an indication, of the *intelligent* character of the force in question.

Being face to face with Mme. Paladino, at a point in the table the most removed from her, I complained that I had not been touched as had the four other persons who formed the company. No sooner had I said this than I saw the heavy curtain sweep out and come and hit me in the face with its lower edge, at the same time that I felt a light blow upon the knuckles of my fingers, as if from a very fragile and light piece of wood.

Next a formidable blow, like the stroke of the fist of an athlete, is struck in the middle of the table. The person seated at the right of the medium feels that he is grasped in the side; the chair in which he was seated is taken away and placed upon the table, from which it then returns to its place without having been touched by anybody. The experimenter in question, who has remained standing, is able to take his seat in the chair again. The control of this phenomenon left nothing to desire.

The blows are now redoubled, and are so terrific that it seems as if they would split the table. We begin to perceive hands lifting and inflating the curtains and advancing so far as to touch first one, then the other, of the company, caressing them, pressing their hands, daintily pulling their ears or clapping hands merrily in the air above their heads.

It seems to me very singular and perhaps intentional,—this contrast between the touches (sometimes nervous and

energetic, and again delicate and gentle, but always friendly) and the deafening, violent, brutal blows struck upon the table.

A single one of these fist-blows, planted in the back, would suffice to break the vertebral column.

The hands that perform these feats are the strong and brawny hands of a man, the daintier hands are those of a woman, the very small hands those of children.

The darkness is rendered a little less dense, and at once the chair of No. 5 (Professor Morselli), which had already made a jump to one side, is slipped from under him, while a hand is placed on his back and on his shoulder. The chair gets up on the table, comes down again to the floor, and, after different horizontal and vertical oscillations, soars up and rests upon the head of the professor, who has remained standing. It remains there for some minutes in a state of very unstable equilibrium.

The loud blows and the delicate touches of hands, large and small, succeed each other uninterruptedly in such a way that, without our being able mathematically to prove the simultaneousness of different phenomena, it is yet almost certain in several cases.

While our opportunities for obtaining so valuable a subject of demonstration increase, the simultaneity which we ask for is at last granted; for the table raps, the bell sounds, and the tambourine is carried tinkling over our heads all about the room, rests for a moment on the table, and then resumes its flight in the air. . . .

A bouquet of flowers, placed in a carafe on the larger table, comes over onto ours, preceded by an agreeable perfume. Stems of flowers are placed in the mouth of No. 5; and No. 8 is hit by a rubber ball, which rebounds upon the table. The carafe comes over to join the flowers on our table; it is then immediately lifted and put to the mouth of the medium, and she is made to drink from it twice; between the two times it sinks down to the table and stands there for a moment right side up. We distinctly hear the swallowing of the water, after which Mme. Paladino asks some one to wipe her mouth with a handkerchief. Finally, the carafe returns to the large table.

But a transfer of a totally different character is effected in the following way. I had complained several times that my position in the chain at a distance from the medium had hindered me from being touched during the séance. Suddenly, I hear a noise on the wall of the room, followed by the tinkling of the strings of the guitar, which vibrate as if some one were trying to take down the instrument from the wall on which it hung. At last the effort succeeds, and the guitar comes toward me in an oblique direction. I distinctly saw it come between me and No. 8, with a rapidity which rendered the impact of it rather unpleasant. Not being able at first to account to myself for this dim black object which was driving at me, I slipped to one side (No. 8 was seated at my left). Then the guitar, changing its route, struck forcibly with its handle three blows upon my forehead (which remained a little bruised for two or three days), after which it came to a rest with delicate precision upon the table. It did not remain there very long before it began to circle about the hall, with a rotation to the right, quite high above our heads, and at great speed.

It is proper to remark that, in this rotation of the guitar, the vibration of its own strings was added to the sound of the tambourine struck sometimes on one side, sometimes on the other, in the air; and the guitar, bulky as it was, never once struck the central supporting electric-light rod, nor the three gas lamps fixed on the walls of the chamber. When we take into consideration the contracted dimensions of the room, we see that it was very difficult to avoid these obstacles, since the space remaining free was very limited.

The guitar took its flight twice around the room, coming to a stand-still (between the two times) in the middle of the table, where finally it came to a rest. In a final supreme effort, Eusapia turns toward the left, where upon a table is a typewriting machine weighing fifteen pounds. During the effort the medium falls exhausted and nervous upon the floor; but the machine rises from its place and betakes itself to the middle of our table, near the guitar.

In full light, Eusapia calls M. Morselli, and, controlled by the two persons next her, brings him with her toward the table, upon which is placed a mass of modelling-plaster.

She takes his open hand and pushes it three times toward the plaster, as if to sink the hand into it and leave upon it an impression. M. Morselli's hand remains at a distance of more than four inches from the mass: nevertheless, at the end of the séance, the experimenters ascertain that the lump of plaster contains the impression of three fingers,— deeper prints than it is possible to obtain directly by means of voluntary pressure.

The medium lifts her two hands, all the time clasped in mine and in those of No. 5 (Morselli), and uttering groans, cries, exhortations, *she rises with her chair,* so far as to place its two feet and the ends of its two front cross-bars upon the top of the table. It was a moment of great anxiety. The levitation was accomplished rapidly, but without any jarring or jolting or jerking. In other words, if, in an effort of extreme distrust you insisted on supposing that she employed some artifice to obtain the result, you would rather have to think of a pulling up, by means of a cord and pulley, rather than of a pushing from beneath.

But neither of these hypotheses can stand the most elementary examination of the facts. . . .

There is more to follow. Eusapia was lifted up still farther with her chair, from the upper part of the table, in such a way that No. 11 on one side and I on the other were able to pass our hands under her feet and under those of the chair.

Moreover, the fact that the posterior feet of the chair were entirely off of the table, without any visible support makes this levitation still more irreconcilable with the supposition that Eusapia could have made her body and the chair take an upward leap.

M. Porro judges that this phenomenon is one of those which are less easily explained if we decline to have recourse to the Spiritualistic hypothesis. It is a little like the man who fell into the water and thought he could pull himself out by his own hair.

Eusapia [adds M. Porro] descended without any jolting, little by little, No. 5 and I never letting go her hands. The

chair, having risen up a little higher, turned over and placed itself on my head, whence it spontaneously returned to the floor.

This thing was tried again. Eusapia and her chair were transported again to the top of the table, only, this time, the result of the fatigue undergone by her was such that the poor woman fell in a faint upon the table. We lifted her down with all due care.

The experimenters desired to know whether these phenomena, the success of which depends in so great measure upon the conditions of light, could not have better success in the white and quiet light of the moon.

They were obliged to admit that there was no appreciable difference between the lunar light and other kinds. But the table around which they had formed the chain quitted the veranda where the sitting was being held, and, in spite of the strongly expressed wishes of the sitters and of the medium herself, betook itself into the neighboring room, where the sitting then continued.

This room was a little salon crowded with elegant furniture and fragile objects, such as crystal chandeliers, porcelain vases, bric-à-brac, etc. The experimenters feared very much that these things would suffer damage in the bustle of the séance; but not the slightest object suffered any damage.

Mme. Paladino, who was now herself again, took the hand of No. 11 and placed it gently upon the back of a chair, at the same time placing her own hand upon his. Then, as she lifted her hand and that of No. 11, *the chair followed the same ascending movement* several times in succession.

This thing was repeated in full light.

No. 5, as well as other gentlemen, perceived, in a manner that admitted of no doubt, a vague, indistinct figure thrown upon the air in the doorway of an antechamber which was feebly illuminated. The figure consisted of changing and fugitive silhouettes, sometimes with the outline of a human head and body, sometimes like hands reaching out from the curtains. Their objective character was demonstrated by the agreement of impressions, which were controlled in their turn by means of continual inquiries. There was no possibility of their being shadows voluntarily or involuntarily

projected by the bodies of the experimenters, since we were mutually watching each other.

The tenth séance (the last) was one of the best-attended, and was perhaps the most interesting of all.

Scarcely has the electric light been extinguished when we remark an automatic movement of the chair upon which a lump of plaster has been placed, while the hands and feet of Eusapia are watchfully controlled by me and by No. 3. However, as we wish to forestall the objection of critics that the phenomena take place in the dark, the table typtologically (that is, by taps) asks for light, and the experimenters light the electric lamp.

Presently, *all the company see the chair* on which the lump of plaster lies (not at all a light chair) *moving between myself and the medium,* without our being able to understand the determining cause of the movement.

Mme. Paladino puts her outspread hand upon the back of the chair and her left above it. When our hands rise up, the chair rises also without contact, reaching a height of about six inches. This performance is several times repeated, with the addition of the intervention of the hand of No. 5, under conditions of light and of control which leave nothing to be desired.

The room is again almost completely darkened. . . . A current of cold air upon the table precedes the arrival of a little branch with two green leaves. We know that there are no plants in the neighborhood of the company: it appears then that we have here a case of *bringing-in* from the outside.

No. 3 is greatly exhausted with the heat. And, lo! a hand, which takes his handkerchief from his neck and with it dries the perspiration on his face. He tries to seize the handkerchief with his teeth, but it is snatched from him. A big hand lifts his left hand and makes him rap several strokes with it on the table.

Gleams of light begin to appear, at first on the right hand of No. 5, then in different parts of the hall. They are perceived by everybody.

The curtain is inflated, as if it were pushed against by a strong wind, and touches No. 11, who is seated in a small easy-chair a yard and a half from the medium. The same person is touched by a hand, while another hand pulls a fan from the inside pocket of his jacket, carries it to No. 5 and then to No. 11. The fan is soon returned to its owner, and is moved to and fro above our heads, to the great satisfaction of all of us. A tobacco pouch is taken from the pocket of No. 3: the Invisible empties it on the table, and then gives it to No. 10. Various stems of plants drop upon the table.

Transfers of the fan from one hand to another begin again. Then No. 11 believes that he ought to announce that the fan had been offered to him by a young girl who had expressed the wish that it be transferred to No. 11, then given back to No. 5. Nobody knew about this except No. 11.

No. 5, who at present occupies the small arm-chair where formerly No. 11 was seated, a yard and a half from the medium, feels the edge of the curtain touching him and then perceives the presence of the body of a woman whose hair rests on his head.

The séance is adjourned about one o'clock.

At the moment of parting, Eusapia sees a bell on the piano; she extends her hand; the bell glides along on the piano, turns over, and falls on the floor. The experiment is renewed, in full light as before, the hand of the medium remaining several inches from the bell. . . .

It is evident that these exploits are still more extraordinary than the preceding ones, in certain respects. The following are the *conclusions* of the report of Professor Porro.

The phenomena are real. They cannot be explained either by fraud or by hallucination. Do they find their explanation in certain strata of the unconscious (the subliminal), in some latent faculty of the human soul, or indeed do they reveal the existence of other entities living under conditions wholly different from ours and normally inaccessible to our senses? In other words, will the *animistic* hypothesis suffice to solve the problem and to do away with

the *Spiritualistic* hypothesis? Or, rather, do not the phenomena serve here, as in the psychology of dreams, to complicate the problem by hiding the Spiritualistic solution within them? It is to this formidable query that I am going to attempt a reply.

When, eleven years ago, Alexander Aksakof stated the dilemma between Animism and Spiritism, and in a masterly work clearly proved that purely animistic manifestations were inseparable from those which direct our thoughts to a belief in the existence of independent, intelligent, and active entities, no one could have expected that the first term of the dilemma would be disputed and criticised in a thousand ways, under a thousand varying forms, by persons who would be dismayed at the second term.

In fact, what are all the hypotheses which for ten years now have been invented in order to reduce mediumistic phenomena to the simple manifestation of qualities latent in the human *psyche* (or soul), if not different forms of the animistic hypothesis, so jeered at when it appeared in the work of Aksakof?

From the idea of the unconscious muscular action of the spectators (put forth half a century ago by Faraday) to the projection of protoplasmic activity or to the temporary emanation from the body of the medium imagined by Lodge; from the psychiatric doctrine of Lombroso to the psychophysiology of Ochorowicz; from the externalization admitted by Rochas to the eso-psychism of Morselli; from the automatism of Pierre Janet to the *duplication of personality* of Alfred Binet,— there was a perfect flood of explanations, having for their end the elimination of an exterior personality.

The process was logical and in agreement with the principles of scientific philosophy, which instructs us to exhaust the possibilities of what is already known before having recourse to the unknown.

But this principle, unassailable in theory, may lead to erroneous results when it is wilfully stretched too far into a given field of research. Vallati has cited, in this connection, a curious marginal note of Galileo, recently published in the third volume of the national edition of his works:

"If we heat amber, the diamond, and certain other very dense substances by chafing them, they attract small light bodies, because, in cooling off, they attract the air, which draws these corpuscles along with it." Thus the desire to bring still unexplained material facts under the known physical laws of his day led an observer and thinker so prudent and practical as Galileo to formulate a false proposition. If anybody had said to him that in the attraction exercised by amber there was the germ of a new branch of science and the rudimentary manifestation of an energy (electricity) then unknown, he would have replied that it was useless to "have recourse to the aid of the unknown."

But the analogy between the error committed by the great physicist and that which modern scholars commit can be pushed still farther.

Galileo was familiar with a form of energy which the natural philosophy of our times investigates simultaneously with electric energy, with which it has close relations confirmed by all recent discoveries. If it had been perceived that the explanation which he gave of the phenomenon of amber had no foundation, he would have been able to give his attention to the analogies which the attraction exercised by amber rubbed over light bodies presents with the attraction exercised by the loadstone upon iron filings. When he had got so far, he would very probably have discarded his first hypothesis and would have admitted that the attractive power of amber is a *magnetic phenomenon.* He would have been deceived, however, for it is an *electric phenomenon.*

In the same way might not those persons deceive themselves who, in order to escape at any cost the necessity of the hypothesis of spiritistic entities, should insist with a too persistent predilection upon the animistic hypothesis, even when this would be found insufficient to explain all mediumistic manifestations? Might it not be true that, like electric and magnetic phenomena, which are in close interchangeable connection, and frequently appear to us inseparable, animistic and spiritistic phenomena have a common bond? And let us well note that a single fact, inexplicable by the animistic hypothesis and explicable by the

spiritistic hypothesis, would suffice to confer upon the latter that degree of scientific value which up to the present time has been so energetically denied to it, just as the discovery of a secondary phenomenon, that of the polarization of light, sufficed to make Fresnel reject the Newtonian theory of emission and admit that of undulation.

Did we obtain, during the course of our ten séances with Eusapia, the one fact which is enough to make the spiritistic hypothesis necessarily take precedence of all others?

It is impossible to reply categorically to this question because it is not possible, and never will be, to have a scientific proof of the identity of the beings who manifest themselves.

The fact that I hear, that I see, that I touch a phantom; that I recognize in it the form and the attitude of persons whom I have known and whom the medium has neither known nor of whom she has even heard the names; that I have the most lively and affecting testimony to the presence of this ephemeral apparition,— all that will not be sufficient to constitute the scientific fact which none can refute, and which shall be worthy to remain in the annals of science along with the experiments of Torricelli, Archimedes and Galvani. It will always be possible to imagine an unknown mechanism by the aid of which elemental substance and power may be drawn from the medium and the sitters and combined in such a way as to produce the indicated effects. It will always be possible to find in the special aptitudes of the medium, in the thought of the sitters, and even in their attitude of expectant attention, the cause of the *human* origin of the phenomena. It will always be possible to unearth from the arsenal of the attacks made upon these studies during the last fifty years, some generic or specific argument, either *ad rem* or *ad hominem,* while ignoring or feigning to ignore the refutation of the argument which has already been made.

The question, then, reduces itself at once to an individual study of cases either directly observed or obtained from some sure hand, in order on the one hand, to create a personal conviction capable of resisting the scathing ridicule of the sceptics, and, on the other hand, to prepare public opinion to

admit the truth of cases observed by persons worthy of credence.

With regard to the first of these, the illustrious experimenter Sidgwick, has already said that no fact or case exists capable of convincing everybody, but that each one, by patiently and calmly observing, may find such fact or case as will suffice to establish his own conviction. I may say that for myself such a case exists. I need only refer to the phenomena in which I have personally participated in the séances with Eusapia.

With regard to the second point I could say much, but that would lead me beyond the subject matter and the limits of this study.

On the one hand, we have the universal belief in the objective existence of a world unknown to us in our normal state; that faith (the basis of all religions) in a future life where the injustices of this one will be atoned for and where we shall be confronted with the good or evil deeds that we have done on earth; that uninterrupted tradition of systematic or spontaneous observances and rituals, thanks to which man is constantly kept in relation more or less with that unknown world.

On the other hand, we have the sceptical and disheartening negation of systems of pessimistic philosophy and of atheism, a negation which takes its rise in the absence of positive proofs of the survival of the soul; the ever more and more marked tendency of science toward a monistic interpretation of the enigma of human life; and the belief that all the known phenomena of life appear only in connection with special organs.

In order to decide in so abstruse a matter as this, mediumistic experiments do not suffice; everyone may draw from these as much of credence or of incredulity as he may need in order to resolve his doubts in one way or another; but he will never divest himself of the substratum of temperamental tendencies which the more or less scientific education of his mind or the more or less mystical inclinations of his nature shall have developed in him.

One word more and I have done.

While admitting it as the most probable hypothesis that

the intelligent beings to whom we owe these psychical phenomena are pre-existing, independent entities, and that they only derive from us the conditions necessary for their manifestation in a physical plane accessible to our senses, ought we to admit also that they are really the spirits of the dead?

To this question I will reply that I do not feel that I am as yet capable of giving a decisive answer.

Still I should be inclined to admit it, if I did not see the possibility that these phenomena might form part of a scheme of things still more vast. In fact, nothing hinders us from believing in the existence of forms of life wholly different from those which we know, and of which the life of human beings before birth and after death forms only a special case, just as the organic life of man is a special case of animal life in general.

But I am leaving the solid ground of facts to explore that of the most hazardous hypotheses. I have already spoken at too great length, and will therefore close the discussion of this particular topic.

I have considered the above subjects in several of my own works.*

We are surrounded by unknown forces and there is no proof that we are not also surrounded by invisible beings. Our senses teach us nothing about reality. But logically the discussion of theories ought to be reserved as a complement to the ensemble or summary of our observations and experiments; that is to say, for the last chapter. It behooves us before everything else positively to ascertain that mediumistic phenomena exist.

It seems to me, that *this has been done* for every impartial reader. This will be overwhelmingly confirmed by the following chapters. But there is one point on which we ought to dwell a moment. I mean the question of fraud, conscious or unconscious, which it would be natural, but

* Notably in *Uranie*, in *Stella*, in *Lumen*, in *L'Inconnu*. See also above, p. 30 in my *Oration at the Grave of Allen Kardec*.

unfair, to here ignore and cover up. Our judicial review would not be complete did we not consecrate a special chapter to these mystifications, which unhappily are too frequently employed by mediums.

CHAPTER V

FRAUDS, TRICKS, DECEPTIONS, IMPOSTURES, FEATS OF LEGERDEMAIN, MYSTIFICATIONS, IMPEDIMENTS

Several times in the preceding chapters the question has come up of fraud in the mediums. I am sorry to say that experimenters must be constantly on their guard against them. It is this which has discouraged certain eminent men and prevented them from continuing their researches, for their time is too precious to waste. This may be especially noticed in the letter of M. Schiaparelli above (p. 64) whom Spiritualists keep citing (wrongly) as among the number of their partisans. But he absolutely refuses to be identified with them. He accepts no theory; he is not even sure of the actual existence of the facts, and has declined to give the time needed for their authentication.

I shall take occasion in the second volume of *The Unknown* to treat of Spiritualism (properly so called), of the doctrine of the plurality of worlds, of the plurality of existences, of re-incarnation, of pre-existence, and of communications with the departed,— subjects independent of the material phenomena to a discussion of which the present work is devoted. To these subjects the physical manifestations only contribute in an indirect manner. As we have already several times said in the preceding pages, we are only concerned here to *prove the actual existence of these extraordinary phenomena.* The establishing of the proof depends above all upon the elimination of fraud.

In the case of Eusapia (the medium most thoroughly ex-

amined in the present volume) fraud, unhappily, has been only too well established in more than one instance.

But a very important remark must here be made. All physiologists know that hysterical persons have a tendency to falsehood and simulation. They lie, apparently without reason, and solely for the pleasure of lying. There are hysterics among the women and young girls of the higher classes.

Does this characteristic defect prove that hysteria does not exist? It proves just the contrary.

Consequently, those who think that the frauds of the mediums give the death blow to mediumship are deceived. Mediumship exists, as well as hysteria, as well as hypnotism, as well as somnambulism. Trickery also exists.

I will not say, with certain theologians, "There are *false* prophets, *therefore* there are *true* ones," for that is a sophism of the worst kind. The existence of the false does not hinder the existence of the true.

I knew a kleptomaniac, who got herself arrested more than once in the great shops of Paris for stealing various articles. That does not prove that she never bought anything, and only obtained by theft all the articles she needed. On the contrary, the objects stolen must have represented but a small part of the materials of her toilet. But the fact that she stole is incontestable. In the experiments which we are considering in these pages, deception is a co-efficient which cannot be neglected.

It is my duty to point out here some examples of this failing. Before doing so, I ought to recall the fact that for a period of forty years I have examined all the mediums whose achievements have had the widest celebrity,— including Daniel D. Home, gifted with the most astounding powers, who, gave at the Tuileries, before the Emperor Napoleon III, his family, and his friends, such extraordinary

séances, and who was later employed by William Crookes in the accurate scientific researches made by that gentleman; Mme. Rodière, a remarkable typtologic medium; C. Brédif, who produced strange apparitions; Eglington, with the enchanted slates; Henry Slade, who made with the astronomer Zöllner those incredible experiments from which geometry only saved itself by admitting the possibility of a fourth dimension of space; Buguet whose photographic plates caught and held the shadows of the dead, and who, having allowed me to experiment with him, let me conduct my researches for five weeks before I detected his fraudulent methods and mechanisms; Lacroix, to whom spirits of all ages seemed to troop in crowds; and many others who inspire deep interest in Spiritualists and scientific investigators by manifestations more or less strange and marvelous.

I have quite often been absolutely deceived. When I took the precautions that were necessary to put the medium beyond the possibility of trickery, I obtained no result; if I pretended not to see anything I would perceive out of the corner of my eye attempts at deceit. And, in general, the phenomena which took place happened only in the moments of distraction in which my attention was for an instant relaxed. While I was pushing my investigation a little farther, I saw with my own eyes Buguet's prepared negatives; saw with my own eyes Slade writing under the table upon a concealed slate, and so forth. Apropos of this famous medium Slade, I may recall the fact that after his experiments with Zöllner, director of the observatory at Leipzig, he came to Paris, and for the purpose of experimentation, placed himself at my disposal (and that of all the astronomers at the Observatory to whom I should introduce him). He said he got direct writings from the spirits by a bit of pencil placed between two slates tied together, by oscillations of the magnetic needle, displacements of fur-

niture, the automatic throwing about of objects, and the like. He was very willing to give me one séance a week, for six weeks (on Monday at 11 o'clock A. M., at 21 Beaujon Street). But I obtained nothing certain. In the cases that did succeed, there was a possible substitution of slates. Tired of so much loss of time, I agreed with Admiral Mouchez, director of the Observatory of Paris, to confide to Slade a double slate prepared by ourselves, with the precautions which were necessary in order that we should not be entrapped. The two slates were sealed in such a way with paper of the Observatory that if he took them apart he could not conceal the fraud. He accepted the conditions of the experiment. I carried the slates to his apartment. They remained under the influence of the medium, in this apartment, not a quarter of an hour, not a half-hour or an hour, but ten consecutive days, and when he sent them back to us there was not the least trace of writing inside; and yet specimens of this were always furnished by him when he had the opportunity of transposing slates prepared in advance.*

Without entering into other details, let it suffice me to say, that, too frequently deceived by dishonest and mendacious mediums, I brought to my experiments with Eusapia a mental reserve of scepticism, of doubt, and of suspicion.

The conditions of experimenting are in general so crooked that it is easy to be duped. And scientists and scholars are perhaps most easily duped of all men, because scientific observation of experiments is always honest, since we are not obliged to distrust nature,— when the question is of a star or of a molecule,— and since we have the habit of describing facts as they present themselves to our intelligence.

* Slade was sentenced to three months of hard labor, in London, for swindling. He died in a private hospital, in the State of Michigan, in September, 1905.

That granted, we may now look at certain curious doings of Eusapia.

We considered a little farther back (p. 173) Col. de Rochas's strange experiment with the letter-weigher. This was considered by the experimenters as absolutely conclusive. I was curious to verify it. Here are my notes on the matter.

I.

November 12, 1898.— This afternoon we took a drive in a landau (Eusapia and I) in company with M. and Mme. Pallotti of Cairo, and, among other things, we visited the exhibition of chrysanthemums at the Tuileries. Eusapia is enchanted. We return about 6 o'clock. My wife seats herself at the piano, and Eusapia sings some Neapolitan airs and some little fragments of Italian operas. Afterwards we all three chat confidentially with each other.

She is in a very happy state of mind, tells us how sometimes on stormy days she experiences electric cracklings and sparkling in her hair, especially on an old wound that she once received on the head. She also tells us that when she has been a long time without holding a séance she is in a state of irritation, and feels the need of freeing herself of the psychic fluid which saturates her. This avowal astonishes me, for, at the end of every séance, she seems rather to be listless and melancholy and seems to hold a sitting rather unwillingly than otherwise. She adds that she frequently has fluidic prolongations of the ends of her fingers, and, putting her two hands on my knees, the inside of the hand turned upward, at the same time spreading out the fingers and placing them opposite each other face to face, at a distance of several inches, and alternately bringing the hands together and withdrawing them, she tells us to observe from time to time the radiations which prolong the fingers by forming a sort of luminous aureole at their extremities. My wife thinks she perceives some of them. I am unable to see anything at all, in spite of all my efforts, although I change the light and shade in all sorts of ways. The salon is lighted at this time by two intense Auer burners. We go into the

bedroom, lighted only by candles, and I cannot see them any better. I snuff out the candles, on the supposition that this is perhaps a case of phosphorescence; but I never perceive anything. We return to the salon. Eusapia spreads a black woollen shawl over her silk skirt and shows me the luminous effluence. But all the time I can see nothing, unless it be for a moment a kind of pale ray at the end of the index finger of her right-hand.

The dinner hour approaches. It is seven o'clock. A letter-weigher (Pl. X), which I had bought to renew the curious experiment of M. de Rochas, is upon the table. I ask Eusapia if she remembers having made a piece of mechanism like this move downward on its spring by placing her hands on each side of it, at a distance, and making something like magnetic passes. She doesn't seem to remember anything about it and hums a little stanza from *Santa Lucia*. I beg that she will try it. She does so. Nothing moves. She asks me to place my hands on hers. We make the same passes, and, to my amazement (for I really was not expecting it at all) the little tray sinks down to the point where it touches the lever and produces the sharp sound of contact. This point is beyond the graduation of the scale, which stops at fifty grams, and may go to sixty, and represents seventy grams at the lowest. The tray immediately rises again. We begin a second time. Nothing. A third time: the same lowering and the same return to equilibrium. Then I beg her to try the experiment alone. She rubs her hands together and makes the same passes. The letter weigher goes down to the same maximum point. We are all standing close by her, in the full light of the Auer burners. The same performance is repeated, the tray remaining down for an interval of about five minutes. The movement does not take place at once; there are sometimes three or four trials without success, as if the force were exhausted by the result. The tray had already sunk down four times before our eyes, always as far as the maximum point, when the valet de chambre, passing by upon some matter of service, I tell him to stop and look. Eusapia begins again and does not succeed. She waits a moment, rubs her hands, begins again, and the same movement without contact is produced for the

seventh time, before the three witnesses, each as much astonished as the other. Her hands are sensibly chilled. I think of the trick of the hair, pass my hands between both of hers and find nothing there; I did not see anything. Besides, she does not seem to have touched her head, and her hands have remained before us since the commencement of the experiment, free and untouched.

On the supposition that there may be here some electric force in operation, I beg her to place her fingers upon an extremely sensitive compass. In whatever way she grasps this, it refuses to move.

We sit down to the dinner-table. I ask her to lift a fork as she had done at Montfort. At the third trial she succeeds — and without the use of a hair, at least any that was apparent.

II.

November 16.— In order to entertain Eusapia, Adolphe Brisson yesterday evening offered her a box at the Folies-Bergère, where Loie Fuller was giving her magnificent spectacular exhibitions. We went there with her. She returned enchanted, is to-day very gay and very animated, speaks of her candid and loyal character and blames the comedies of fashionable life. During dinner she tells us a part of the story of her life.

Nine o'clock.— M. and Mme. Levy and M. G. Mathieu have just arrived.

We are conversing. Placing her hands on a leg of M. Mathieu in the darkness she shows him the radiations emanating from her fingers, which are however scarcely apparent to us.

It was after having shown me these radiations, the other day, that the experiment of the letter-weigher took place. She associates the two phenomena, and undertakes to try the latter again.

She asks me to give her a little water. I go to the dining-room in search of a carafe and a glass. During my absence, M. Mathieu remarks that, while my wife is talking with M. and Mme. Levy, Eusapia reaches her hand to her head and makes a little gesture as if she were pulling out a hair.

Plate XI

Method Used by Eusapia to Surreptitiously Free her Hand.

I return with a glass and a carafe and pour out for her as much as she wishes. She drinks a quarter of a glass of water. At my request, she moves her hands downward on each side of the letter-weigher in the same way as day before yesterday, and after two or three passes the tray sinks, not to its full length as day before yesterday, but to the mark of thirty-five or forty grams.

The experiment was tried a second time and succeeded in the same way.

Under pretext of going in search of a photographic camera M. Mathieu draws me into another room and shows me a long, very fine hair which fell into his hand after the experiment, at the moment when Eusapia was making a gesture as if she were going to shake his hand.

This hair is of a rich chestnut tint (the color of Eusapia's hair) and measures fourteen inches in length. *I have preserved it.*

This took place at quarter past nine. The sitting begins at 9:30 and finishes at 11:30. After the sitting, Eusapia asks me for another glass of water, and shows me a little hair between her fingers.

Just as she is going, at midnight, half laughingly, half seriously, she pulls a hair from the front part of her head and, taking the hand of my wife, puts this hair in it and closes the hand while looking her in the eye. She certainly noticed that we had perceived fraud.

III.

November 19.— Eusapia is a sly one. She is gifted with great sharpness of sight and has unusually sensitive ears. She is very intelligent and is a person of rare delicacy of feeling. She perceives and divines everything which concerns herself. Never reading, since she doesn't know how to read; never writing, since she doesn't know how to write; speaking little when here, since she rarely finds persons who understand and speak Italian, she remains always concentrated in herself and nothing turns her from permanent thought about her own personality. It would undoubtedly be impossible to discover a similar state of mind in the case of other persons; for we, as they, are generally occupied

with a thousand things which scatter our attention over many different objects.

I arrive, at 11:30, at the rooms of Dr. Richet in order to escort Eusapia to Mme. Fourton's, where we are to take luncheon. She is cold and constrained. I pretend not to notice it, and keep talking with the doctor. She goes to put on her hat and we descend the stairs. At the foot of the staircase she says, "What did M. Richet say to you? What were you speaking of?" A moment after, returning in thought to our last séance, she says, "Were you completely satisfied?" In the carriage I take her hand and converse with her in a friendly way. "Everything is going very well," I say to her; "but some experiments will still be necessary in order to leave no room for doubt." Then I speak to her of other things.

She becomes gradually sociable and her clouded brow seems to clear up. However, she evidently feels that in spite of my rather superficial amiability, I am not absolutely the same to her. During the luncheon she holds out her champagne glass to me and drinks my health. Mme. Fourton is convinced of Eusapia's genuineness, beyond all manner of doubt. During conversation, a little later, Eusapia says to her, "I am sure of you, I am sure of Mme. Blech, of M. Richet, of M. de Rochas; but I am not sure of M. Flammarion."

"You are sure of Mme. Fourton," I replied. "Very well. But think for a moment of the several thousand persons who are waiting for my opinion in order to fix their own. M. Chiaia told you this at Naples, M. de Rochas repeated it to you in Paris. You see I have a very great responsibility and you yourself certainly see that I cannot affirm that of which I am not absolutely certain. You ought yourself loyally to aid me in obtaining that certainty."

"Yes," she replied, "I understand the difference very well. However, if it had not been for you I should not have made the journey from Naples, for the climate of Paris does not agree with me very well. Oh, certainly; we must have you convinced beyond the possibility of doubt."

She has now returned to her habitual intimacy. We took her to the Museum at the Louvre, which she had not visited,

then to a meeting with M. Jules Bois who was making suggestion-experiments with Mme. Lina. Eusapia is very much interested in these. We speak of the jests and mimickings of the comedians.

In the evening, at dinner, the brilliant conversation of Victorien Sardou, the repartees of Col. de Rochas, the questions (a little insidious) of Brisson, all interest her; but it is evident that she never forgets herself. Thus, before dinner, she tells me that she has the headache, especially in the neighborhood of her wound, passes her hand through her hair ("which hurts her"), and asks me for a brush. "In order," she says, that "in case of a séance experiment, a stray hair shall not be found in the wrong place." And she carefully brushes her shoulders. I do not always appear to understand her. But there is no doubt that she understands that we have — found a hair!

IV.

(MORE RECENT NOTE,— MARCH, 1906.)

On Thursday, March 29, Eusapia, being in Paris, came to see me. I had not seen her since her séances at my house in November, 1898. We kept her to dinner, and after dinner I asked her to take part with me in some experiments.

I first asked her to place her hands upon the piano, thinking that perhaps some of its strings would vibrate. But nothing happened.

I then induced her to place her hands on the covered keyboard. She asked that it be slightly opened by means of a little block. I placed my hands upon it, by the side of hers. My object was, by keeping up contact, to keep her from slipping a finger over the keys. She kept trying to substitute one hand for the two that I held, in such a way as to leave one of them free, and a few notes sounded. Result of the experiment, *nil*. We left the piano and went over to a white-wood table. We got some insignificant balancings.

"Is there a spirit there?"

"Yes" (indicated by three raps.)

"Does it wish to communicate?"

"Yes."

I pronounce slowly and in their proper order the letters of the alphabet.

Reply, "*Tua matre,*" ("thy mother.")

This certainly means "Tua madre." (note once more that Eusapia does not know how to read or write.)

Eusapia noticed that I was in mourning and I had told her that my mother had died on the first of last July. I then asked to be told her name. (Eusapia does not know it.)

No reply.

The movements of the table which were next asked for gave no results of any particular value.

However, a stuffed arm-chair near by was several times shifted out of its place without contact, advancing of itself toward Eusapia. Since the chandelier was lighted, and there was no possibility of any string being used, and since I had my foot upon that one of Eusapia's which was nearest the arm-chair, the movement must evidently have been due to a force emanating from the medium.

I pushed the easy chair back three times. Three times it returned. The same phenomenon was reproduced several days afterward.

It is observable that if she had been able to detach her foot from mine, she would have been able to reach the chair (by some little twisting,) and the production of the phenomenon must have been within the range of her circle of activity (and of possible trickery). But, as the case was, deception was impossible.

Since we could not obtain any levitation of the table, and since the psychical force of the four of us (Eusapia, myself, my wife, and Eusapia's companion, who had joined us for a moment, but, who at other times, always remained apart) was clearly insufficient, I went and secured a lighter round table. Then, with her hands placed *upon* it in contact with mine, three of its feet were raised to a height of ten or twelve inches from the floor. We repeated the experiment three times, with gratifying success. Eusapia squeezed my hands violently in one of hers (the right hand) which rested on the table.

The whole séance is thus seen to have been a web of intermingled truth and falsehood.

These notes remind us once more that there is almost always a mingling of veritable fact and of fraudulent performance.

It is easy to admit that the medium, wishing to produce an effect, and having at her disposal for this purpose two means,— the one easy and demanding only skill and cunning, the other distressing, costly, and painful,— is tempted to choose, consciously or *even unconsciously,* that which costs her the least.

The following is her method of procedure for obtaining the substitution of hands. The figures shown in Plate XI represent four successive positions of the medium's hands and those of the sitters. They show how, owing to the darkness and to a skilful combined series of movements, she can induce the sitter on the right to believe that he still feels the right hand of the medium on his own, while he really feels her left hand, which is firmly held by the sitter on the left. This right hand of hers, being then free, is able to produce such effects as are within its reach.

The substitution may be obtained in different ways. But, whichever method is used, it is evident that the freed hand can only operate in a space within its reach.

Who of us is always master of his impressions and of his faculties? writes Dr. Dariex in this connection.* Who of us can at will put himself into such and such a physical condition and such and such a moral state? Is the composer of music master of his inspiration? Does a poet always write verses of equal worth? Is a man of genius always a man of genius? Now, what is there less normal, more impressionable, and more capricious than a sensitive, a medium, especially when she is away from home, thrown out of the routine of her daily life, and staying with those with whom she is unacquainted or knows very slightly, who are to be her judges and who expect from her the rare and

* Annales des sciences psychiques, 1896, p. 66.

abnormal phenomenon the production of which is not under the constant and complete control of her will?

A sensitive placed in such a situation, will have a fatal propensity to feign the phenomenon which does not spontaneously materialize or to heighten by deceit the intensity of a partially successful experiment.

This feigning is of course a very vexatious and regrettable thing. It throws suspicion upon the experiments, renders them much more difficult and less within the reach of the investigator. But this is only an impediment, and ought not to fetch us up short and lead us to give a premature decision. All of us who have experimented with and handled these sensitives know that at every step we run foul of fraud, conscious or unconscious, and that all mediums — or almost all — are used to the thing. We know that we must, unfortunately, take our share, for the moment, of this regrettable weakness, and be perspicacious enough to hinder, or at least to unearth the trickery, and to disentangle the true from the false.

More than one of those who have engaged perseveringly in psychic experiments, can say that he has been sometimes enervated and irritated while waiting for a phenomenon which does not take place, and that he has felt something like a desire to put an end to this waiting by himself giving the extra twist or decisive touch.*

Such experimenters can understand that if, in place of being conscientious workers, always masters of themselves, incapable of deceiving, and engaged solely in the search for scientific truth, they were, on the contrary, somewhat dreamy and impulsive persons who were susceptible to suggestion and whose *amour propre* was active, and in whose minds scientific probity did not hold the first and pre-eminent place, they would undoubtedly engage, more or less involuntarily, in the artificial production of phenomena which refused to take place in smooth and natural order.

As to Eusapia, if she does sometimes counterfeit, she does it only by eluding the watchful inspection of the experimenters and by escaping for a moment from their control; but

* We have already noticed (see p. 149) the practical joke of Professor Bianchi in a meeting of the most serious investigators.

PLATE X. SCALES USED IN PROFESSOR FLAMMARION'S EXPERIMENT.

she does it without any other artifice. Her experiments are not planned, and, contrary to the habit of prestidigitators, she does not carry any apparatus upon her person. It is easy to assure one's self of this, for she is very willing to completely undress before a lady charged with keeping watch of her.

Furthermore, she exhibits her powers *ad libitum* with the same persons, and repeats indefinitely the same experiments before them. Prestidigitators do not act in this way.

It is infinitely to be regretted that we cannot trust the loyalty of the mediums. They almost all cheat. This is extremely discouraging to the investigator, and the constant perplexity of mind we feel during our investigations renders them altogether painful. When we have passed several days in these inexplicable researches and then return to scientific work,— to an observation or to an astromical calculation, for example, or to the examination of a problem in pure science,— we experience a sensation of freshness, calmness, relief, and serenity which give us, by contrast, the most lively satisfaction. We feel that we are walking on solid ground and that we have not got to distrust anybody. Indeed, all the intrinsic interest of psychic problems is needed, sometimes, to give us the courage to renounce the pleasure of scientific study in order to give ourselves to investigations so laborious and perplexed.

I believe that there is only one way to assure ourselves of the reality of the phenomena, and that is to put the medium under conditions in which trickery is impossible. To catch her in the very act of deceit would be extremely easy. It would only be necessary to give her free rein. And then one can very easily aid her to cheat and to get caught. All that is necessary is that we be convinced of her dishonesty. Eusapia, especially, very easily takes suggestion. While going one day in an open carriage to dine at his residence,

Colonel de Rochas said to her, in my presence, "You can't lift your right hand any more. Try it!" She did try, but in vain. "Non posso, non posso!" ("I can't do it, I can't do it!"). The mere suggestion had been sufficient.

In the phenomena concerned with the movements of objects without contact she always makes a gesture corresponding to the phenomenon. A force darts forth from her and performs the deed. Thus, for example, she strikes with her fist three or four strokes in the air at a distance of ten or twelve inches from the table: the same strokes are heard in the table. And it is positively in the wood of the table. It is not beneath it, nor upon the floor. Her legs are held and she does not move them. She strikes five strokes with the middle finger upon my hand in the air: the five strokes are rapped upon the table (November 19).

Nay more, this force can be transmitted by another. I hold her legs with my left hand spread out upon them; M. Sardou holds her left hand; she takes my right wrist in her right hand and says to me, "Strike in the direction of M. Sardou." I do so three or four times. M. Sardou feels upon his body my blows tallying my gesture, with the difference of about a second between my motion and his sensation. The experiment is tried again with the same success.

That same evening, not only did we not let go for a single instant of Eusapia's hands, separated from each other by the width of her body and placed near our own, but we did not allow them to be moved from the side of the objects to be displaced. It took considerable time to obtain results. But, all the same, they were wholly successful.

She has a tendency to go and take hold of the objects; she must be stopped in a good time. However, she herself does take hold of them, in fact, through the prolongation of her muscular force, and she says so: "I am grasping it, I have

hold of it." It is our part to carefully retain her normal hands in ours.

We sometimes have good reason to suspect that Eusapia seizes the objects to be moved (such as musical instruments) with one of her hands which she has freed. But there is plenty of proof that she does not always do so. Here is a case, for example. The scene is Naples, 1902, at a séance with Professor von Schrenck-Notzing:

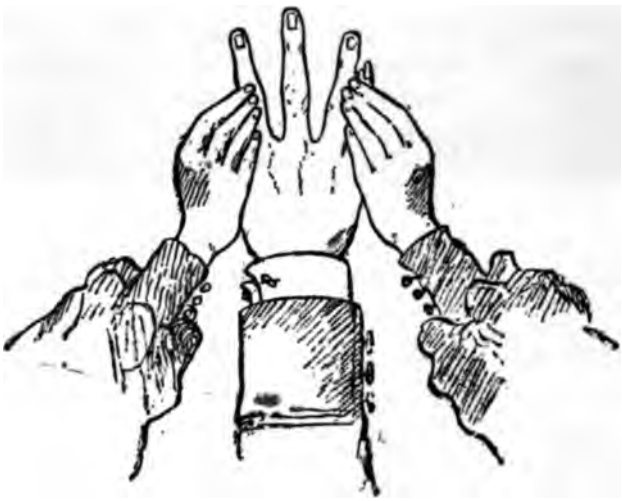


FIG. 2.

The séance took place in a little room, by a feeble light, but one sufficient for us to distinguish the personages and their movements. Behind the medium, upon a chair, there was a harmonica, at the distance of about a yard.

Now, at a certain moment, Eusapia took between her hands a hand of the professor and commenced to separate his fingers one from another and bring them together again, as may be seen in the accompanying cut. The harmonica was at that moment playing at a distance in tones that perfectly synchronized the movements made by Eusapia. The instrument was isolated in the room. We made sure that there

were no threads connecting it with the medium. Still less could anybody fear accomplices, for the light would easily have betrayed their intervention. This performance was analogous to that which occurred in my presence on the 27th of July, 1897. (see above p. 72.)

The following is a typical example of "sympathetic" movements, taken from a report by Dr. Dariex. The matter in hand was to make a key spring out from a lock.

The light was strong enough for us to perfectly distinguish Eusapia's every movement. All at once, the key of the chest is heard to rattle in its lock; but, caught in some unknown way, it refuses to budge. Eusapia grasps with her right hand the left of M. Sabatier, and, at the same time, curls the fingers of her other hand around his index finger. Then she begins to make alternate movements of rotation back and forth around his finger. We at once hear synchronous rattlings of the key which turns in its lock just as the fingers of the medium are doing.*

Let us suppose that the chest, instead of being at a distance from the medium, had been within her reach; let us still further suppose that the light, instead of being abundant, had been feeble and uncertain: the sitters would not have failed to confound this kind of synchronous automatism with conscious and impudent fraud on the part of Eusapia. And they would have been deceived.

Without excusing fraud, which is abominable, shameful, and despicable in each and every case, it can undoubtedly be explained in a very human way by admitting the reality of the phenomena. In the first place the real phenomena exhaust the medium, and only take place at the cost of an

* See *Annales*, 1896. The report is very rich in records. The door of the wardrobe opened and closed of itself, several times in succession, in synchronism with the movements of the medium's hands, which were at about a yard's distance. A toy piano weighing about two pounds was moved about, and played several airs all alone, etc.

enormous expenditure of vital force. She is frequently ill on the following day, sometimes even on the second day following, and is incapable of taking any nourishment without immediately vomiting. One can readily conceive, then, that when she is able to perform certain wonders without any expenditure of force and merely by a more or less skilful piece of deception, she prefers the second procedure to the first. It does not exhaust her at all, and may even amuse her.

Let me remark, in the next place, that, during these experiments, she is generally in a half-awake condition which is somewhat similar to the hypnotic or somnambulistic sleep. Her fixed idea is to produce phenomena; and she produces them, no matter how.

It is, then, urgent, indispensable, to be constantly on the alert and to control all her actions and gestures with the greatest care.

I could cite hundreds of analogous examples observed by myself in the years gone by. Here is one taken from my notes.

On the second of October, 1889, a spiritualistic séance had brought together certain investigators in the hospitable mansion of the Countess of Mouzay, at Rambouillet. We were told that we had the rare good fortune to have with us a veritable and excellent medium,— Mme. X., the wife of a very distinguished Paris physician, herself well educated and inspiring by her character the greatest confidence.

We arranged ourselves, four in all, around a little table of light wood. Scarcely a minute has passed when the little table seems to be taken with trembling, and almost immediately it rises and then falls back. This vertical movement is repeated several times in the full light of the lamps of the salon.

The next day the same levitation occurred in broad daylight, at noon, while we were waiting for a guest who was

late to luncheon. This time the round table used was much heavier.

"Is there a spirit there?" some one asks.

"Yes."

"Is he willing to give his name?"

"Yes."

Someone takes an alphabet, counts the letters, and receives, by taps made by one of the feet of the table, the name Léopoldine Hugo.

"Have you something to say to us?"

"Charles, my husband, would like to be reunited to me."

"But where is he?"

"Floating in space."

"And you?"

"In the presence of God."

"All that is very vague. Could you give us a proof of identity to show us that you are really the daughter of Victor Hugo, the wife of Charles Vacquerie? Do you remember the place where you died?"

"Yes, at Villequier."

"Inasmuch as the accident of your shipwreck in the Seine is well known, and since the whole thing may be latent in our brains, could you please give us other facts? Do you remember the year of your death?"

"1849."

"I do not think so," I replied, "for I have in my mind's eye a page of the *Contemplations* where the date of September 4, 1843, is written. Has my memory played me false?"

"Yes. It is 1849."

"You astonish me very much, for in 1843, Victor Hugo returned from Spain on account of your death, while in 1849 he was a representative of the people in Paris. Moreover, you died six months after your marriage, which took place in February, 1843."

At this point, the Countess of Mouzay remarked that she was very well acquainted with Victor Hugo and his family, that they were living then in the street of Latour-d' Auvergne, and that the date 1849 must be correct.

I maintain the contrary. The spirit sticks to its fact.

"In what month did the event take place?"

"July."

"No, it was in September. You are not Léopoldine Hugo. How old were you when you died?"

"Eighteen years. They don't remember very often to decorate my tomb with flowers."

"Where?"

"At Père-Lachaise."

"You are wrong, it was at Villequier that you were buried, and I went myself to visit your tomb. Your husband, Charles Vacquerie is also there, with the two other victims of the catastrophe. You don't know what you are talking about."

At this point our hostess declares that she was not thinking at all of Père-Lachaise, and that, in her opinion, Léopoldine Hugo and her husband remained at the bottom of the Seine.

After luncheon we sit down again at the sèance table. Various oscillations. Then a name is dictated.

"Sivel."

"The aeronaut?"

"Yes."

"In what year did you die?"

"1875." (Correct.)

"What month?"

"March." (It was April 15.)

"From what point did your balloon start?"

"La Villette." (Correct.)

"Where did you fall?"

"In the river Indre."

All these "elements" were more or less known to us. I ask for a more special proof of identity.

"Where did you know me?"

"With Admiral Mouchez."

"It is impossible. I first knew Admiral Mouchez at the time of his appointment to the directorship of the Paris Observatory. He succeeded Le Verrier in 1877, two years after your death."

The table is agitated and dictates as follows:

"Give your name."

"Witold. Marchioness, I love you still."

"Are you happy?"

"No, I behaved badly to you."

"You know very well that I pardon you, and that I preserve the happiest recollection of you."

"You are too good."

These thoughts were evidently in the mind of the lady; so there was here no more proof of identity than in the other case.

All of a sudden the table begins to move vigorously, and another name is dictated, "Ravachol." *

"Oh, what is he going to say to us?"

I will set down here what he said, though not without shame, and with all due apologies to my lady readers. Here it is in all its crudity:

"*Bougres de crétins, votre sale gueule est encore plaine des odeurs du festin.*"

("Nasty blackguards and idiots, your dirty throat is still full of the odors of the feast.")

"Monsieur Ravachol, this language of yours is exquisite! Have you nothing more refined than this to say to us?"

"You be blowed!"

Certainly no one of us was capable of consciously composing such a sentence as that. But everybody knows the words that were used. Perhaps our conscious or sub-conscious thoughts spoke in them? Did they emanate from Mme. X., the medium?

In the uncertainty into which we were plunged by these two séances, we asked M. and Mme. X. to come and pass a Sunday at Juvisy and try some new studies and tests.

They came, and on Sunday, October 8, we obtained some remarkable levitations. But there are some dregs of doubt yet in our minds, and we make engagements for another reunion that day fortnight.

On Sunday, the 22d of October, 1899, in furtherance of my desire to exercise careful control over the investigators, I had four broad boards nailed together, forming a vertical frame in which I placed the little table to be used during the sitting. This framework made it impossible for the feet

* A Parisian Anarchist executed for dynamiting the houses of the Judges Benoit and Bulot. The popular chanson of the Anarchists called *La Ravachole* originated in this man's deeds and personality. See Alvan Sanborn's *Paris and the Social Revolution*, Boston, 1905.— *Trans.*

of the sitters to pass under the table; and if it rose in spite of this, then we should know that the levitation was due to an unknown force.

The remarks of Mme. X., when she saw this device, made me think at once that no levitation was going to take place.

"This power of ours," said she, "is capricious; on some days we get good results, on others none at all, and for no apparent reason."

"But we shall perhaps have raps, at any rate?"

"Certainly. We ought not to anticipate results. One can always try."

Two hours after luncheon, Mme. X. agrees to try a sitting. *No levitation whatever occurred.*

I had some suspicions that this would be the case. I ardently desired the contrary, and we willed the levitation with all our might. I was expressly careful to have the same experimenters (Mme. X. and Mme. Cail, and myself) as a fortnight before, when everything succeeded so admirably,— same places, same chairs, same room, temperature, hour, etc.

Raps indicate that a spirit wishes to speak. I notice that the raps correspond to a muscular movement of Mme. X.'s leg.

"Who are you?"

"In the library of the master of the house my name will be found in a book."

"How shall we find it?"

"It is written on a piece of paper."

"In what book?"

"*Astronomia.*"

"Of what date?"

No reply.

"Of what color?"

"Yellow."

"Bound?"

"No."

"Stitched?"

"Yes."

"On what shelf?"

"Hunt."

"It impossible to go through thousands of volumes, and, besides, there is not such a book in the whole library."

No reply.

After a series of questions we learn that the book is on the sixth shelf of the main body of the library, to the right of the door. But first, we all went into the room to make sure it contained no such book as was described.

"Then the volume is bound in boards?"

"Yes, there are four *low* volumes."

"We return to the room, and, sure enough, find in a volume entitled *Anatomia Celeste,* Venice, 1573, a piece of paper, upon which is pencilled the name "Krishna." We return to the séance table.

"Is it really you, Krishna?"

"Yes."

"In what epoch did you live?"

"In the time of Jesus."

"In what country?"

"In the neighborhood of the Himalaya mountain system."

"And how did you write your name on this piece of paper?"

"By passing through the thought of my medium."

Etc., etc.

I thought it would be superfluous to persist any farther.

Mme. X. not being able to raise the table had chosen the device of table rappings. The calling up of the Hindu prophet, however, I thought was a fine piece of audacity.

The simplest hypothesis is that the woman went into my library and put the piece of paper in the book. In fact, she was seen there. But even had she not been, the conclusion would be no less certain. For the room was open, and Mme. X. had remained about an hour in the next room, detained by "a nervous headache."

This specimen of mediumistic trickery is, as I have said, one among hundreds. Really, one must be endowed with the most unwearіable perseverance to enable him to devote to those studies hours which would be much better employed even in doing nothing at all. However, when one has the

conviction that something real exists he always returns, in spite of incessant trickery.

In the month of May, 1901, Princess Karadja introduced to me a professional medium, Frau Anna Rothe, a German, whose specialty consisted in her alleged ability to spirit flowers into a tightly closed room in broad daylight.

I made arrangements for a séance with her at my apartments in Paris. During its continuance, bouquets of flowers of all sizes, did, in truth, make their appearance, but always from a quarter in the room the opposite of that to which our attention was drawn by Frau Rothe and her manager, Max Ientsch.

Being well nigh convinced that all was fraud, but not having the time to devote to such sittings, I begged M. Cail to be present, as often as he could, at the meetings which were to be held in different Parisian salons. He gladly consented, and got invited to a séance at the Clément Marot house. Having taken his station a little in the rear of the flower-scattering medium, he saw her adroitly slip one hand beneath her skirts and draw out branches which she tossed into the air.

He also saw her take oranges from her corsage, and ascertained that they were warm.

The imposture was a glaring one, and he immediately unmasked her, to the great scandal of the assistants, who heaped insults upon him. A final séance had been planned, to be held in my salon on the following Tuesday. But Frau Rothe and her two accomplices took the train at the Eastern Railway station that very morning, and we saw them no more. In the following year she was arrested in Berlin, after a fraudulent séance, and sentenced to one year in jail for swindling.

In this class of things, cheatings and hoaxings are as

numerous as authenticated facts. Those who are curious in such things will not have forgotten the scandalous hoax and misdemeanor of the celebrated Mrs. Williams, an American woman who was received in full confidence, in 1894, in Paris, by my excellent friend, the Duchess of Pomar. Already made distrustful by the ingenious observations of the young duke, the sitters were determined not to be the butt of her fooleries very long, and a sitting was agreed on. The participators were MM. de Watteville, Dariex, Mangin, Ribero, Wellemberg, Lebel, Wolf, Paul Leymarie (son of the editor of *La Revue Spirite*), etc.

The specialty of Mrs. Williams (who was, by the way, quite a stout person) was the showing of apparitions, or ghosts. Said apparitions proved to be manikins, rather poorly got up; the lady spectators, as well as the gentlemen, were quite disappointed at the absence of the rich and flowing outlines of *form* under the draperies of the wretched puppets. Thin and limp, tatterdemalion things, they showed not the faintest resemblance to the normal and classic contours of woman, the lines of which we should have been able to glimpse at least to some extent under the light gauze that enwrapped the figures. Several bright-witted, but rather irreverent, ladies took no pains to conceal the fact that they should prefer annihilation if it were necessary to be so . . . "reduced," so "incomplete" in the other world! The gentlemen added that they would certainly not be alone in lamenting such a state of things!

There was no religious atmosphere at all about these sittings. The imposture was discovered, or, one might rather say, seized, by M. Paul Leymarie. He simply grasps Mme. Impostor around the waist (having slipped behind the curtain for the purpose), and holds her fast for the inspection of the audience. Lights are brought on, and, in the midst

of the confused uproar made by twenty-five duped sitters, the heroine of the entertainment is compelled to show herself in flesh tights, while the whole apparatus of her ghostly puppet-show is discovered in the cabinet!

Mrs. Williams had the effrontery to defend herself, a little later, in the American Journal *Light*, bestowing the playful epithet of "bandits" upon those who had unmasked her in Paris.

That was a case of high mystification, of jugglery worthy of a street-corner mountebank. But, as we have already seen, matters do not usually attain to such a height of audacity, and quite often fraud only intervenes when the genuine powers have become enfeebled. This well appeared in the accounts of the "girl torpedo-fish," Angelica Cottin, who attained a good deal of notoriety.

On the 15th of January, 1846, in the village of Bouvigny, near Perrière (Orne), a young girl thirteen years old, named Angelica Cottin, light and robust, but extremely apathetic in physical temperament and in morals, suddenly exhibited strange powers. Objects touched by her, or by her clothing, were forcibly repelled. Sometimes, even on her mere approach, people were thrown into commotion and excitement, and pieces of furniture and household utensils were seen to move and vibrate. With some variations in intensity, and with intermittences, sometimes, of two or three days, this curious virtue held good for about a month, then disappeared as unexpectedly as it had appeared. It was authenticated by a large number of persons, some of whom submitted the little girl to genuine scientific experiments, and embodied their observations in formal reports, which were collected and published by Dr. Tanchou. This gentleman first saw Angelica on February 12 (1846), in Paris, where she had been taken to be exhibited. The manifestations (which had decreased from the day when the

basis, or usual course of her habits had been altered) were on the point of disappearing altogether. Yet they were still distinct enough to enable the investigator to draw up the following note, which was read to the Academy of Science, on February 17, by Arago, an eye-witness of the facts.*

I saw the young "electric" girl twice (says Dr. Tanchou).

A chair which I was holding as hard as I could with my foot and both hands was forcibly wrenched from me the moment she sat down in it.

A little slip of paper which I held poised on one finger was several times carried away as if by a gust of wind.

A dining-table of moderate size, though rather heavy, was more than once displaced by the mere touch of her dress.

A little paper wheel, placed vertically or horizontally upon its axis was put into rapid movement by the radiations which darted from this child's wrist and the bend of her arm. †

A large and heavy sofa upon which I was seated was pushed with great force against the wall the moment the girl came to seat herself by me.

A chair was held fast upon the floor by strong men and I was seated on it in such a way as to occupy only the half of the seat. It was forcibly wrenched away from under me as soon as the young girl sat down on the other half.

One curious thing is that every time the chair is lifted it seems to cling to Angelica's dress. It follows her for an instant before it becomes detached.

Two little elder-pith balls or feather-balls, suspended by a silken thread, are set in motion, attracted to each other and sometimes repelled.

* See also *Enquête sur l'authenticité des phénomènes electriques d'Angclique Cottin*. Paris, Germer Ballière, 1846. Also *L'Exteriorisation de la motricité*, by Albert de Rochas.

† Lafontaine, who also studied Angelica's case, says that "when she brought her left wrist near a lighted candle, the flame bent over horizontally, as if continually blown upon." (*L'art de magnetiser*, p. 273).

M. Pelletier observed the same thing in the case of some of his subjects, when they brought the palm of the hand near a candle.

Specialists call these points "hypnogenic points," from which fluidic streams radiate.

This girl's radiations of psychic force (*émanations*) are not permanently present during all the hours of the day. They are especially strong in the evening, from seven to nine o'clock, — which leads me to surmise that perhaps her last meal (taken at six o'clock) is not without its influence.

The emanations are given forth only from the front part of the body, especially at the wrist and at the bend of the arm. They only occur on the left side, and the arm of this side is of a higher temperature than that of the other. It gives off a gentle heat, as from a part where a lively reaction is going on. The arm trembles and is continually disturbed by unusual contractions and quiverings which seem to be imparted to the hand that touches it.

During the time I observed this subject, her pulse varied from 105 to 120 pulsations a minute. It seemed to me frequently irregular.

When she is isolated from the common reservoir of electric or magnetic power, either by being seated upon a chair without her feet touching the floor or when placing them upon the chair of a person in front of her, the phenomena do not take place. They also cease when she is made to sit down on her own hands. A waxed floor, a piece of oiled silk, a plate of glass under her feet or on the chair, all have the effect of antagonizing and destroying for the time the electro-dynamic property of her body.

During the paroxysm she can touch scarcely anything with her left hand without throwing it from her as if it burned her. When her clothes touch the articles of furniture in a room she attracts them, displaces them, and overturns them.

One will understand this more easily when it is realized that at every electric discharge she runs away to escape the pain. She says " it pricks" or " stings " her in the wrist or bend of the elbow. Once when I was feeling for her pulse in the temporal artery (not having been able to locate it in the left arm) my fingers chanced to touch the nape of the neck. She uttered a cry and drew back quickly from me. I several times assured myself of the fact that, near the cerebellum, at the place where the muscles of the upper part of the neck are joined to the cranium, there is a spot so sensitive

that she allows no one to touch it. All the sensations she feels in her left arm are here echoed or repeated.

The electric emanations of this child seem to move by waves, intermittently, and in succession through different parts of the anterior portion of the body. But be that as it may, *they are certainly accompanied by an aëriform current which gives the sensation of cold.* I plainly felt upon my hand a quick puff of air like that produced by the lips.

Every time the mysterious force strikes through her frame and materializes in an act, terror and dismay fill the mind of this child, and she seeks refuge in flight. Every time she brings the end of her fingers near the north pole of a piece of magnetized iron, she receives a severe shock; the south pole produces no effect. If I manipulated the iron in such a way that I could not myself tell the north pole on it, *she* could always tell it very well.

She is thirteen years old and has not yet reached the age of puberty. I learned from her mother that nothing like menstruation has yet appeared. She is very strong and healthy, but her intellect is as yet little developed. She is a peasant cottager (*villageoise*) in every sense of the word; yet she knows how to read and write. Her occupation is the making of thread gloves for ladies. The first electric phenomena began a month ago.

It is desirable to add to the foregoing note extracts from other reports. Here, for example, is a citation from M. Hébert:

On the 17th of January,— that is to say, the second day of the appearance of the phenomena,— the scissors suspended from her waist by a cotton tape, flew from her without the cord being broken, and no one could imagine how it got untied. This circumstance, incredible from its resemblance to the pranks of lightning, makes one think at once that electricity must play an important rôle in the production of such astonishing effects. But this way of looking at the thing did not last long. For the miracle of the scissors only occurred twice, once in the presence of the curé of the village,

who guaranteed to me upon his honor the truth of the statement. In the middle of the day almost no effects were obtained, but in the evening, at the usual hour, they redoubled in intensity. It was at that time that action without contact took place, and effects were produced in organic living bodies. These latter made their first appearance in the form of violent shocks felt in the ankles by one of the women laborers who happened at the time to be facing Angelica, the points of their sabots being about four inches apart.

Dr. Beaumont Chardon, a physician of Mortagne, also published similar notes and observations,— among others the following:

The repulsion and attraction, hopping about and displacement, of a rather solid table; of another table six feet by nine, mounted on casters; of another four-feet-and-a-half square oak table; of a very massive mahogany easy-chair, — *all these displacements took place through contact with the Cottin girl's clothes,— contact either involuntary or purposely brought about by experiments.*

There was a sensation of violent prickings when a stick of sealing-wax or a glass tube suitably rubbed was placed in contact with a bend in the left arm or with the head, or simply when brought somewhat near there. When the sealing-wax or the tube had not been rubbed, or when they were being wiped dry or moistened, there was a cessation of effects. The hairs on one's arm, made to slope or lie flat by a little saliva, rose up again at the approach of the child's left arm.

I have already remarked that this young girl was brought to Paris as a subject of scientific observation. Arago, at the Observatory, in the presence of his colleagues MM. Mathieu, Laugier, and Goujon, established the truth of the following phenomena:

When Angelica held out her hand toward a sheet of paper laid near the edge of a table, the paper was strongly attracted by the hand. Approaching a centre-table, she

grazed it with her apron, and the table drew back from her. When she sat down on a chair and put her feet on the floor, the chair was thrown back violently against the wall, and she herself was thrown forward to the other side of the room. This last experiment, repeated several times, always succeeded. Neither Arago nor the astronomers of the Observatory were able to hold the chair down. M. Goujon, who had sat down in advance upon one half of the chair which was going to be used by Angelica, was upset at the moment when she came to share the seat with him.

Following a favorable report of its illustrious perpetual secretary,* the Academy of Science named a commission to examine Angelica Cottin. This commission confined its efforts exclusively to the task of determining whether or not the electrical force of the subject was similar to that of the machines or that of the torpedo-fish. They could not come to any conclusion, probably on account of the emotion excited in the girl at the sight of the formidable apparatus of experimentation; and then her peculiar powers were already on their decline. Thus the commission hastened to declare all the communications on this subject made to the Academy previous to this to be null and void.

Upon this topic my old master and friend Babinet, who was a member of the commission, wrote as follows:

The members of the commission were not able to verify any of the features announced. There was no report made, and Angelica's parents, worthy people of the most exemplary probity, returned with her from Paris to their own locality. The good faith of this couple and of a friend who accompanied them interested me very much, and I would have given anything in the world to find some reality in the wonders that had been proclaimed about the girl. The only remarkable thing she did was to rise from her chair in the most

* Arago.— *Trans.*

matter of fact way in the world and hurl it behind her with such force that often the chair was broken against the wall. But the supreme experiment,— that in which, according to her parents, the miracle was revealed of motion produced without contact,— was as follows: She was placed standing before a light centre-table covered with a thin silken stuff. Her apron also made of a very light and almost transparent silk, rested on the centre-table (though this last condition was not indispensable). Then, *when the electric force appeared,* the table was overturned, while "the electric girl" maintained her usual stupid impassivity. I had never personally seen any success attained in this particular feature of the girl's performances; nor had my colleagues of the commission of the Institute, nor the physicians, nor certain writers, who, with great assiduity, had attended all the séances appointed at the headquarters of the girl's parents in Paris. As for myself, I had already overstepped all the bounds of friendly complaisance, when, one evening the parents came to beseech me, in virtue of the interest I had shown in them, to attended one more séance, saying that the electric force was going to declare itself anew with great energy. I arrived about eight o'clock in the evening at the hotel where the Cottin family was staying. I was disagreeably surprised at finding a séance intended only for myself, and the friends whom I brought with me, overrun by a crowd of physicians and journalists who had been attracted by the announcement of the prodigies which were to begin again. After due excuses had been made I was introduced to a back room which served as dining-room, and there I found an immense kitchen table made of oak planks of an enormous thickness and weight. At the moment when dinner was being served the electric girl had, by an act of her will (it was said), overturned this massive table, and, as a necessary result, broken all the plates and bottles that were on it. But her excellent parents did not regret the loss, nor the poor dinner that resulted from it, on account of the hope that animated them that the marvellous qualities of the poor idiot were going to manifest themselves and receive the official stamp of authenticity. There was no possibility of doubting the veracity of these honest witnesses. An octogenarian who accompanied

me (M. M.—, the most sceptical of men) believed their recital as I did; but, after entering with me the room full of people, this distrustful observer took his stand in the very entrance-door, alleging as a pretext the crowd in the room, and so placed himself as to have a side view of the electric girl with her centre-table before her. The crowd that faced the girl occupied the farther end and the sides of the room.

After an hour of patient waiting, and all in vain, I withdrew, expressing my sympathy and my regrets. M. M. remained obstinately at his post. He *pointed* the electric girl with his unwearied eye, as a crouching setter does a partridge. At last, at the end of another hour, when the attention of the company was distracted by innumerable preoccupations and several centres of conversation had been formed — suddenly the miracle occurred: the centre-table was overturned. Great amazement! great expectations! They were just beginning to cry "Bravo!" when M. M., advancing by warrant of age and the love of truth, declared that he had seen Angelica, by a convulsive movement of the knee, push the table that was placed before her. He drew the conclusion that the effort she must have made before dinner in the overturning of the heavy kitchen table would have occasioned a severe contusion above her knee,— a matter that was investigated and found to be true. Such was the end of this melancholy affair in which so many people had been duped by a poor idiot, who yet had enough crafty cunning to inspire illusion by her very calmness and impassivity. We have still to account for the singular facts observed near Rambouillet (see the *Reports* of the Academy), at the house of a wealthy manufacturer, all whose vases and other vessels of pottery-ware burst into a thousand pieces at the moment when least expected. Kettles and other large vessels cast in metal also flew into fragments, to the great loss of the proprietor, whose troubles, however, ceased with the discharge of a servant, who had come to an understanding with a man who was to occupy the factory so that he might get it at a better bargain. Nevertheless, it is to be regretted that the matter ended before it was discovered what fulminating powder had been employed to produce such curious results, so new, and, apparently, so well proved. *

* *Études et lectures sur les sciences d'observations*, vol. II., 1856.

Babinet adds farther on in the same volume the following remarks on Angelica Cottin:

In the midst of wonders which she did *not* perform there was seen a very natural effect of *the first relaxation of muscles* which was curious in the highest degree. The girl, of slight figure and torpid physique, who was correctly styled the "torpedo-fish," being first seated on a chair and then rising very slowly (in the midst of the movement she was making in the act of rising) had the *power* of throwing backward, with terrifying suddenness, the chair she was leaving, without anybody being able to perceive the slightest movement of the trunk of the body, and solely by the relaxation of the muscle which had been in contact with the chair. At one of the test-séances in the laboratory of physics at the Jardin des Plantes, several amphitheatre chairs of white wood were hurled against the walls in such a way as to break them. A second chair, which I had once taken the precaution to place behind that in which the electric girl was seated (for the purpose of protecting, if need were, two persons who were conversing at the back part of the room) was drawn along with the propelled chair and went with it to arouse from their absent-mindedness the two savants. I will add that several young employees at the Jardin des Plantes succeeded in performing — although in a less brilliant way — this pretty trick in bodily mechanics. In order to get a good idea of this play of the muscles by a similar effect, you have only to gently squeeze that part of the muscle of some one's arm that is most developed, at the same time that he makes the motion of opening and closing his fist several times. You will at once feel the swelling up of the muscles and divine the movement that would result from it were the change of shape made very rapid:

Such is the report of the learned physicist. It is thus that fraud once more hindered the recognition of the reality of phenomena that had been duly proved before. Accompanying this there was also a weakening of the faculties of the performer. But it is absurd to conclude from this

that the observers of the earlier days in this case (including Arago and his colleagues of the Observatory,— Mathieu, Laugier, and Goujon,— as well as the examiner Hébert, Dr. Beaumont Chardon, and others) were poor observers, and were deceived by movements of the foot of this child.

We may allow for the fraud, conscious and unconscious of mediums. We may deplore it, for it throws an unpleasant gloom upon all the phenomena; but let us render justice to incontestable facts, and continue to observe them.

Quære et invenies! Seek and thou shalt find. *The Unknown,* the science of to-morrow.

CHAPTER VI

THE EXPERIMENTS OF COUNT DE GASPARIN

One of the most important series of experiments that has been made on the subject of moving tables is that of Count Agénor de Gasparin at Valleyres, Switzerland, in September, October, November, and December of the year 1853. The Count has published formal reports of these studies in two large volumes.* These séances may be called purely scientific, for they were conducted with the most scrupulous care and were under the severest control. The table usually employed had a round oak top thirty-two inches in diameter, which rested on a heavy three-footed central column, the feet being about twenty-two inches apart. There were usually ten or twelve experimenters, and they formed the chain on the table by touching each other with their little fingers in such a way that the thumb of the left hand of each operator touched that of his right hand, and the little finger of the right hand touched that of the left hand of his neighbor. In the opinion of the author, this chain is useful, but not absolutely necessary. The rotation of the table usually began after a waiting of five or ten minutes. Then it lifted one foot to a height that varied from time to time, and fell back again. The levitation took place even when a very heavy man was seated on the table. Rotations and levitations were obtained without the contact of hands. But let us hear the author himself:

* *Des Tables tournantes, du Surnaturel en général, et des Esprits, par le comte Agénor de Gasparin, Paris, Dentu, 1854.*

It is a question of positive fact that I wish to solve. The theory will come later. To prove that the phenomenon of turning tables is real and of a purely physical nature; that it can neither be explained by the mechanical action of our muscles nor by the mysterious action of spirits,— such is my thesis. It is my wish to state it with precision and circumscribe its limits here at the very start. I confess I find some satisfaction in meeting with unanswerable proofs the sarcasms of people who find it easier to mock than to examine. I am well aware that we have got to put up with that. No new truth becomes evident without having been first ridiculed. But it is none the less agreeable to reach the moment when things assume their legitimate place, and when rôles cease to be inverted. This moment might have been long in coming. For a long time I feared that table-phenomena would not admit of a definite scientific demonstration; that, while they inspired absolute certainty in the minds of the operators and witnesses at first hand, they would not furnish irrefutable arguments to the public. In the presence of bare possibilities, each person would be free to cherish his own particular opinion; we should have had believers and sceptics. The classification would have taken place in virtue of tendencies rather than by reason of one's knowledge or ignorance of the facts. Some, in the agreeable sensation of their intellectual superiority, would have carried their head very high, and others would have abandoned themselves in despair to the current superstitions of the day. The truth incompletely demonstrated would have been treated as a lie, and, what is worse, would have ended by becoming such.

But thank God! it will not be so now. Our meetings were real and formal séances, to which the best hours of the day were given. The results, verified with the most minute care, were embodied in formal and official declarations. I have these *procès-verbaux* before me now, and it seems to me that I could not do better than to take up one after another and extract from each the interesting observations it may contain. I shall thus follow the method of certain historians, and relate the truth rather than systematize it. The reader will, as it were, follow us step by step. He will examine and check my various assertions by comparing them; he will

form his own conviction, and will judge whether my proofs have that character of frequent occurrence, of persistency, of progressive development which false discoveries, based upon some fortuitous and poorly described coincidence, never have.

These are promising premises. We shall see whether the promises will be kept. The report (or minutes) of the first meeting bears the date of September 20, 1853. Numerous séances had been held before, but it had not been thought necessary to write down the results. What those results were will be seen by the following brief account:

Only those have an invincible conviction (writes Count de Gasparin) who have participated in séance studies frequently and directly, who have felt under their very fingers the production of those peculiar movements which the action of our muscles cannot imitate. They know the limitations of their powers and where to stop. For they have seen the table refuse to rotate at all, in spite of the impatience of the investigators, and in spite of their clamorous appeals. Then again, they have been present when it started to move so gently, so softly and spontaneously started, it can be said, under fingers which hardly touched it. They have at times seen the legs of the table (riveted by some enchantment to the floor) refuse to budge on any terms, in spite of the incitement and coaxing of those who composed the chain. On other occasions they have seen the same table-legs perform levitations that were so free and energetic that they anticipated the hands, got the start of the orders, and executed the thoughts almost before they were conceived, and with an energy well-nigh terrifying. They have heard with their own ears stunning raps and gentle raps, the one threatening to break the table, the others of such incredible fineness and delicacy that one could scarcely catch the sounds, and none of us could in any degree imitate them. They have remarked that the force of the levitations is not diminished when the sitters are removed from the side of the table that is to form the fulcrum. They have themselves commanded

the table to lift that one of its legs over which rest the only hands that compose that portion of the chain still remaining, and the leg has risen as often and as high as they wished. They have observed the table in its dances when it beats the measure with one foot or with two; when it reproduces exactly the rhythm of the music that has just been sung; when, yielding in the most comic way to the invitation to dance the minuet, it takes on grandmotherly airs, sedately makes a half turn, curtsies, and then comes forward turning the other side! The manner in which the events took place told the experimenters more than the events themselves. They were in contact with a reality which soon made itself understood.

The persevering experiments we had made before the 20th of September had already given us proof of two principal things,— the levitation of a weight that the muscular action of the operators was powerless to move, and the reproduction of numbers by mind reading.

I shall now give the formal declarations or reports, by Count de Gasparin, or at least the essential parts of them. I shall present them here as the author has done, séance after séance. The reader will judge. He is urged to read the reports with the greatest attention. They are scientific documents of the highest value, and quite as important as the preceding ones.

Séance of September 20

Some one proposed the experiment which consists in causing a table to rotate and give raps while it has on it a man weighing say a hundred and ninety pounds. We accordingly placed such a man on the table, and the twelve experimenters, in chain, applied their fingers to it.

The success was complete: the table turned, and rapped several strokes. Then *it rose up entirely off the floor* in such a way as to upset the person who was upon it. Let me be permitted here, in passing, to make a general remark. We had already had numerous meetings. Our experimenters,

among whom were several young ladies of delicate physique, had worked with very unusual perseverance and energy. Their bodily fatigue at the end of each sitting was naturally very great. It seems as if we should therefore have expected some nervous collapses more or less grave, to show themselves among us. If explanations based upon involuntary acts performed in a state of extraordinary excitement had the least foundation in fact, we should have had trances, almost possessions, and, at any rate, nervous attacks. Now, in spite of the exciting and noisy character of our meetings, it did not happen, in five months time, that any one of us experienced a single moment of indisposition or sickness of any kind. We learned something more: when a person is in a state of nervous tension, he or she becomes positively unfit to act upon the table. It must be handled cheerfully, lightly, and deftly, with confidence and authority, but without passion. This is so true that the moment I took too much interest in things I ceased to obtain obedience. If, on account of public discussions in which I had been engaged, I chanced to desire success too ardently and to grow impatient over delay, I had no longer any control over the table; it remain inert.

Séance of September 24

We began pretty poorly, and were almost inclined to think that the net result of the day's experiments would be limited to the two following observations, which have their value, to tell the truth, and which our experience has always confirmed: First, there are days when nothing can be done, nothing prospers, although the sitters are as numerous, as strong, and as excited as ever,— which proves that the movements of the table are not obtained by fraud or by the involuntary pressure of the muscles. Second, there are persons (those among others who are sickly or fatigued) whose presence in the chain is not only of no use, but even detrimental. Destitute themselves of the fluidic force, they seem, besides, to hinder its circulation and transmission. Their good will, their faith in the table are of no avail; as long as they are there the rotations are feeble, the levitations spiritless, the drafts drawn on the table are not honored; that one of its feet

facing them is especially struck with paralysis. Beg them to retire, and immediately the vitality appears again and everything succeeds as if by magic. Indeed, it was only after we had taken this course that we finally obtained the free and energetic movements to which we had been accustomed. We had become quite discouraged; but when the purging of which I have just spoken took place, lo, what a change! Nothing seems difficult to us. Even those who (like myself) ordinarily have only mediocre success, now think of numbers and make the table rap them out with complete success, or with the slight imperfection (that frequently occurs) of a tap too many, owing to the delay in giving the mental order to stop the taps.

Seeing that everything was going according to our wish, and having decided to try the impossible, we next undertake an experiment which marks our entrance into a wholly new phase of the study and places our former experimental demonstrations under the guarantee of a positively irrefutable demonstration. We are going to leave probability behind and dwell with evidence. We are going to make the table move *without touching it.* And this is how we succeeded that first time:

At the moment when the table was whirling with a powerful and irresistible rotation, at a given signal we all lifted our fingers. Then keeping our hands united by means of the little fingers, and continuing to form the chain at a height of say an eighth or a quarter of an inch above the table, we continued our circular movement. *To our great surprise the table did the same;* it made in this way three or four turns! We could scarcely believe our good fortune; the by-standers (witnesses) could not keep from clapping their hands. And the way in which the rotation took place was as remarkable as the rotation itself. Once or twice the table stopped following us because the little accidents and interruptions of our march had withdrawn our fingers from their regular distance from the top of the table. Once or twice the table had come to life again — if I may so express myself — when the turning chain had again got into the right relation with it. We all had the feeling that each hand had carried along in its course that portion of the table immediately beneath it.

Séance of September 29

We were naturally impatient to submit rotation without contact to a new test. In the confusion of the first success we forgot to renew and vary this decisive experiment. When we got to thinking about it afterwards we saw that it behooved us to do the thing over again with more care and in the presence of new witnesses; that it was, above all, important to produce the movement and not merely to continue it, and to produce it in the form of levitations instead of limiting it to rotations. Such was the program of our meeting of September 29. Never was program carried out with greater precision. As a preliminary, we repeated our successful feat of the 24th. While the table was rotating rapidly, the interlocked hands were lifted from it, though continuing to turn above it and form the chain. The table followed, making now one or two revolutions, and now a half or a quarter turn only. The success, more or less prolonged, was certain. We confirmed it several times. But some one might say that, the table being already in motion, the momentum carried it along mechanically while we imagined it was yielding to our fluidic force. The objection was absurd, and we would have challenged anybody to obtain a single quarter of a turn without forming the chain, however rapid might have been the rotation imparted. Above all, would we have challenged anyone to renew its motion when it had been for an instant suspended. However, it is well in such cases to forestall even absurd objections, however little of plausibility they may have. And this particular objection might seem plausible to the inattentive man. It was imperative, then, that we should produce rotation starting from a state of complete inertia. This we did. The table being as motionless as we were, the chain of hands parted from it and began to turn slowly at a height of about three-eighths of an inch above its edge. In a moment the table made a slight movement, and each of us striving to draw along by his will that part situated under his own fingers, we succeeded in drawing the disk in our train. The details that followed resembled those of the preceding case. There is such difficulty in maintaining the chain in the air

without breaking it, in keeping it near the border of the table without going too quick and thus destroying the harmonious relation established, that it often happens that the rotation stops after a turn or a half-turn. Yet it is sometimes prolonged during three or even four revolutions. We expected to encounter still greater obstacles when we should undertake levitation without contact. But the matter turned out quite otherwise. This is easily explained when we remember that in this case there is no circular movement and it is much easier to maintain the normal position of the hands above the table. The chain, then, being formed at a distance of an eighth of an inch or so above the round top of the table, we ordered one of its legs to lift itself up, and it did so.

We were highly delighted, and repeated this pretty experiment many times. Without touching it in any way, we ordered the whole table to rise into the air, and to resist the witnesses, who had to put forth effort to bring it down to the floor. We commanded it to turn bottom side up, and it fell over with its feet in the air, although we never touched it with our fingers, but kept them in advance of it as it fell, at the distance agreed upon.

Such were the essential results of this meeting. They are such that I hesitate to mention in the same connection incidents of secondary importance.

I will only say, in passing, that the séance was very discouraging at the start; for, not only was it found necessary to remove certain new operators, but several of the old ones did not bring to it their usual high spirits. The table responded poorly; raps were made faintly and as if with reluctance; the telepathic reading of numbers did not succeed. Then we took a resolution from which we derived much benefit: we persevered, and persevered gaily; we sang, we made the table dance; we gave up all thoughts of new experiments and persisted in easy and amusing ones. After a while conditions changed; the table fairly bounded, and hardly waited for our orders; we were now in condition to try more serious things.

Séance of October 7

A long meeting, and very fatiguing. It was principally devoted to the trial of various mechanical devices which had no success whatever,— such as metal rings; frameworks of canvas or of paper placed upon the table; plates on pivots; and spring-keys. Whether the sight of all this gear hindered the radiation of the fluidic force from the operators, whether the contrivances themselves stopped its circulation in the table, or whether, in fine, the natural conditions of the phenomenon were disturbed in some other way, it is certain that the results amounted to nothing or were doubtful.

One new experiment succeeded. A plate turning on a pivot held a tub. I filled this tub with water, and two of my collaborators and I plunged our hands into it. We formed the chain and began a circular walk, being careful not to touch the tub. This at once imitated our movement. We repeated the thing several times in succession.

Since it might be supposed that the impulse given to the water would suffice to set in motion a tub resting on so delicately balanced a plate, we at once proceeded to prove the contrary. The water was given a circular whirl causing it to move with much greater rapidity than when we formed the chain; but the tub moved not a peg. Undoubtedly the point remains to be considered whether one of us three did not touch the inside of the tub and so determine its movement. To that I reply, first, that the way in which our hands were held in the water obviously proves that none of our fingers could really touch bottom; secondly, that, taking pains as we did to form the chain at the centre, it would have been scarcely less difficult for us to touch the vertical sides of the tub.

And yet, the doubt being not wholly inadmissible, I class this experiment among those of which I do not purpose to make any use. I wish to show that I am hard to please in the matter of evidence.

The proof which the rapping of numbers by mind-reading furnishes has always seemed to be one of the most convincing. In the sitting I am describing, it had this special feature, that each of the ten operators in turn received

the communication of a number in writing, the others having their eyes shut. Now, in the whole ten, one alone failed to obtain perfect obedience from the table-leg which had been assigned to him by very suspicious witnesses, or by-standers. If my readers will reflect carefully they will see that the combinations of movements communicated and of cheating tricks which such a solid result as this would require passes far beyond the bounds of admissible things. To justify it the objector must invent a miracle much more astounding than ours.

Let us turn again to the finest of all demonstrations, that of levitation without contact. We began by performing it three times. Then, since it was thought by some that the inspection of the witnesses could be carried on in a surer way in the case of a small table than in that of a large one, and with five operators more certainly than with ten, we had a plain deal centre-table brought which the chain, reduced by half, sufficed to put in rotation. Then the hands were lifted, and, *contact with the table being entirely broken, it rose seven times into the air at our command.*

Séance of October 8

Two circumstances occurred to confirm the results we had obtained in preceding séances. Among the numbers selected for the thought-test the roguery of one of the witnesses had placed a zero, and the leg selected by him to respond was at the left of the operator and beyond the reach of his muscular action. Now, the command having been given to the leg and no action resulting, we were all feeling disconsolate, being convinced that our weakness that day was so great that we were not going to obtain even simple levitations. I affirm most emphatically that if movement had ever been imparted by an experimenter to a table leg, it would have appeared at that moment. Our nerves were in an exalted state and our impatience was at its height. Yet no movement of the table took place, and we were consequently all the more solaced when we learned that the figure communicated had been a cipher.

Movement without contact was accomplished twice.

To our experiment of a table that gave raps while having

a man upon it, it had been objected that this man might lend his aid to the movement, and even incite it in part. Determined to seek out the truth with the most anxious care, we had recognized a certain plausibility in this objection, and had decided to meet it fairly. The being who was living, intelligent, and consequently suspected must be replaced by an inert weight. Buckets filled with sand must be placed in the precise centre of the table, which should then be called on to exhibit its skill.

But the day was badly chosen. After we had placed on the table two buckets, one upon the other, both weighing in all 143 pounds, it was discovered that we were unable to produce the levitation. It was necessary for us to content ourselves with continuing them in circular movement after they had been started. The buckets were removed, the table was set in motion, and the buckets replaced while the movement was at its height. They did not arrest it in the least, but were carried around with such force that the sand flew out on all sides.

The remainder of the sitting was given up to an investigation of the subject of (alleged) divination, or guessing.

When the table was asked to guess something known to one of the members of the chain, it pretty frequently and quite naturally happened that it guessed it. It is the case of thought-reading by numbers,— nothing more, nothing less.

When it is asked to guess a thing known to a member of the company who does not form at the time a part of the chain, it happens sometimes that it guesses it. But the person in question must be endowed with great fluidic power and be able to exercise it at a distance. We did not ourselves obtain anything like this; but others have succeeded, and their testimony seems too well established to be called in question.

Up to the present moment, it is plain, there is not the least trace of divination. It is fluidic action, near-by or distant.

If the tables divine, if they think, if there are spirits, we ought to get decisive responses in the case where no one knows the facts, either in the chain or out of the chain. The problem thus stated, the solution is not difficult.

Take a book. Do not open it, but invite the table to read

the first line of the page you will designate,— say page 162 or page 354. The table will not flinch: it will rap, and will compose words for you. It was thus, at least, that it always acted with us. At any rate, one thing is certain, that neither here nor elsewhere, has any spirit, however cunning, read, this simple line; nor will it be able in the future to do so. I recommend the experiment to the partisans of spirit evocations.

As to the test of pieces of money in a purse, hours, playing-cards etc., the tables betake themselves to a strict calculation of probabilities; they guess just as much as you do, or as I do. Inasmuch as it is a question of small numbers of which one can form in advance an approximate idea, the range of possible combinations is not very extensive. The mind fixes upon a number which has a fairly good chance of being the true one, and the proportion between the failures of the table and its successes is in such a case just what it would be apart from all question of miraculous divination.

Séance of November 9

Before entering upon the description of this sitting,— a very remarkable one,—I will say that neither the thermometer nor the mariners' compass have furnished the slightest indication of anything interesting. I thought I ought to note this, in passing, to show to the reader that we did not neglect to employ instruments which seemed likely to put us in the way of obtaining a scientific explanation. In general, I pass by that phase of our work, as well as the different trials which remained merely trials, and did not lead to any positive results.

Our first care was to renew the experiment of the levitation of an inert weight. It was agreed among us this time that we would always start from the state of absolute immobility in the object: we wanted to produce movement, not to continue it.

The centre of the table, then, having been fixed with nice precision, a first tub of sand, weighing 46 pounds, was placed upon it. *The legs easily rose from the floor when they got the order.*

A second tub, weighing 42 pounds, was next placed in the middle of the other. *They were both lifted* — less easily, but very neatly and clearly.

Then a third tub, smaller, and weighing 28⅗ pounds, was placed on top of the two others. The levitations took place.

We had still further got ready enormous stones weighing altogether 48½ pounds. They were placed on the third tub. After rather long hesitation, *the table lifted several times in succession each of its three legs.* It lifted them with a force, a decision, an élan, which surprised us. But its strength, already put to so many proofs, could not resist this last one. Bending under the powerful swaying motion imparted by the total mass of 165 pounds, *it suddenly broke down,* and its massive centre-post was split from top to bottom — to the great peril of the operators on the side of whom the entire load rolled off.

I shall not stop to comment on such an experiment. It answers all demands. Our united muscular force would not have sufficed to determine the movements that took place. A mass of inert matter free from the suspicion of being obliging, had replaced the person whose complicity was held in suspicion. Finally, when the three legs had been lifted, each in turn, critics no longer had as a resource the insinuation that we had caused the weight to be laid more on one side than on the other.

Inasmuch as our poor table had been wounded on the field of honor and could not be repaired on the spot, we got a new one which much resembled it. But it was a little larger and a little lighter.

The interesting point was to be settled whether we were going to be obliged to wait for it to be charged with the psycho-physical fluid. The occasion was a famous one for solving this important problem: Where does the fluid reside? — in the operators or in the piece of furniture. The solution was as prompt as it was decisive. Scarcely had our hands, in chains, been placed upon this second table than it began to revolve with the most unexpected and the most comic rapidity! Evidently, the fluid was in us, and we were free to apply it in succession to different tables.

We lost no time. In the mood in which we then were,

movement without contact must succeed better than ever. Nor did we deceive ourselves in so thinking. We first developed rotations without contact to the number of five or six.

As to levitations without contact, we discovered a method of proceeding that renders their success easier. The chain, formed a few millimetres above the top disk, is arranged so as to go in the direction in which the movement is to take place; the hands the nearest to the leg called on to rise are outside of and beyond the top; they draw near and pass gradually by, while the hands that are opposite, and which had at first advanced toward the same leg, move away from it while they attract it. It is during this progression of the chain, while all our wills are fixed upon a particular spot on the wood, and when the orders to levitate are forcibly given, that the foot quits the ground and the table-top follows the hands,— to the point of upsetting, if one did not keep hold of it.

This levitation without contact was produced about thirty times. We produced it by each of the three legs in succession, in order to remove every pretext for criticism. Moreover, we watched the hands with scrupulous care. If the reader will please observe that this surveillance was exercised during thirty operations without detecting the slightest contact, I think it will be concluded that the reality is henceforth placed beyond all doubt.

Séance of November 21

The chief characteristic of this séance was the absence of that one of our number who exercised the greatest authority at the table.* In working without her we were put in a position to establish two things: first, that one cannot with impunity do without an extraordinary gifted experimenter; and, second, that one can, nevertheless, do without him or her, if it is absolutely necessary, and that success, although less brilliant in this case, is not impossible. I call special attention to this last point, as well as to the frequent modifications of our personnel, for the benefit of suspicious persons who, not knowing the mental worth of the persons in question, might be disposed to place to the account of their dex-

* The lady who soon after was styled "the medium."

terity the results to which they essentially contribute. The psycho-physical working power of a "sensitive" table-turner is of a mixed nature: a resolute posture and a circular movement are not sufficient to give birth to it. Besides this, and above all, there is needed *the will.*

Our will having at last asserted itself, and muscular pressure having yielded its place to the pressure of commands, the fluidic rotation arrives, after five or six minutes of concentration of our thoughts. We felt, indeed, keenly that some important person was lacking and that we did not possess our usual power. However, we were determined to succeed, even at the price of greater mental fatigue.

So we took up boldly our most difficult feat; namely, movements without contact. Rotations without touch were obtained thrice. I should add that they were very incomplete, — a quarter of a turn, or a half-turn at most.

As to levitations without touch our success was more decisive; but it was purchased at the price of a very considerable expenditure of force. After each levitation we had to rest, and, when we had reached No. 9 we were absolutely obliged to stop, overcome with fatigue. One must have had personal knowledge of such experiments to understand what drafts they make upon one's attention and energy, and at what point it is indispensible to will, and to will peremptorily, that such and such a knot of wood in the table shall follow the opened fingers that are alluring it at a distance.

But be that as it may, our attempt was crowned with success, and we could end the sitting with less exhausting exercises.

The idea came to us then and there to try our powers on a large table with four legs. It had often been claimed that three-legged centre-tables alone would respond to our manipulations. It was time to furnish undeniable proof to the contrary. So we took a table three feet five inches in diameter, a folding half of which (independent of the leg that supports it when it is raised) can be turned up at will.

Scarcely were our fingers in place than the table began a rotation with noisy bustle, the sprightliness of which surprised us. It thus showed that tables with four legs were no more refractory than others. In addition to this, it fur-

nished a new argument in favor of one of our former observations,— that the fluid is in the persons and not in the tables. In fact the movement of the large table took place almost immediately, and before it could be considered as charged with fluid.

The next task before us was to make it give raps with its different legs. We began with those fastened to one half of the top, three in number. They rose from the floor two at a time with such force that at the end of a moment one of the casters flew to pieces.* Now it is difficult to form an idea of the intensity which a fraudulent action of the fingers must have acquired in order to exercise a leverage upon so heavy a table, and launch it into the air to such a height.

There remained the leg of the table which was independent of the top. We thought it would obey as well as the others. But no! In vain did we pour out the most prodigal and pressing invitations: it was never willing to rise, either along with its right-hand neighbor or with its neighbor on the left. Our next thought was that this was due to the persons placed near it, and certain members of the chain changed seats. In vain! All combinations failed one after another.

We drew great deductions from this circumstance. But since it was refuted later, when the contumacious leg yielded perfect obedience at another meeting, I will not take the public into our confidence by a display of our reasonings on the subject. I will only ask that two things be noted; first, the care we took to verify many times the phenomena before affirming them; and, second, that we have here once more a fine refutation of the critics who assert that muscular action can explain everything. If this were so, why did not muscular action lift the free leg as well as those fastened tight to the table? It could have done so just as easily; and yet for some *unknown reason,* but one evidently *foreign to the laws of mechanics,* only the attached legs consented to move.

Séance of November 27

We were in full muster; but two or three of the operators were slightly indisposed. On the whole, whatever was the

* This was the only table with casters that the operators made use of.

cause, the occasion was scarcely remarkable for anything except the almost total absence of fluidic power. For a single moment we had a little of it. A half-hour of action and two hours and a half of inertia — this was our net result.

Nothing was more lamentable, and at the same time more curious, than to see us about the different tables, passing from one to another, enjoining them to do the most elementary things, and only obtaining a weak and languid rotation, which soon stopped altogether.

Séance of December 2

I should have been vexed to have to close my recital with so dull and spiritless a record as the preceding one. By good fortune the last of our reports gives me the right to leave a totally different impression on the reader's mind.

We were in fine temper. Perhaps the beautiful weather helped. It is not the first time I have noticed this. What is certain is that the very same persons who, on November 27, had only a half-hour of success and had passed the rest of the sitting in beseeching in vain for anything better than poor abortive rotations or faint raps, to-day governed the table with an authority, a quickness, and, if I may so put it, an elasticity of bearing that left nothing to be desired.

The large table with four legs was set in motion. And this time, the ease with which the free leg lifted its share of the table proved that we were right in not drawing too definite conclusions from its former refusal. Every time that we tried to lift without contact that part of the table the farthest removed from myself I felt the table-leg nearest me gradually approach and press against my leg. Struck with this occurrence, which took place several times I drew the conclusion that the table *was gliding forward,* not having enough force to rise. We were, then, exercising a perceptible influence on this large table without touching it in any way.

In order the better to assure myself of it, I left the chain and observed the movement of the feet of the table on the floor. It ranged from fractions of an inch to several inches. When we then tried to turn up without contact the folding leaf of a gaming-table covered with cloth, we obtained

the same result: the folding leaf would not yield to our influence, but the entire table advanced in the direction of the prescribed movement. Now, I ought to add that the gliding was not at all easy, for the floor of our room was rough and uneven.

It is interesting to note in this connection the moment when this gliding movement ordinarily begins. It occurs at precisely the same time that the levitation without contact takes place when that manifestation is in process. When the portion of the chain which is pushing on has just advanced beyond the side of the table-top, where it begins to turn, and when that portion of the chain that is pulling has just crossed the middle point in its recession, then the ascensional movement — or, in default of that, the *gliding motion* —manifests itself. Our fluidic power is then at its maximum, precisely at the instant when our mechanical power is at its minimum, when the hands that are pushing have ceased to act (supposing the case of fraud) and when the hands that pull are powerless to act.

Let us now revert to our ordinary table. We tried to produce rotations and levitations without contact, and had complete success.

Such reports as the foregoing are of more value than all the dissertations. They show the undeniable reality of the levitation not total, but partial,— of the table which remained in an oblique position poised on two legs only. They show also rotations and levitations *without contact,* as well as glidings under the influence of a natural force hitherto only slightly studied.

Levitations of a heavy table, having on it a man weighing 191 *pounds, or of tubs of sand and stones weighing* 165 *pounds,*— no denial of these occurrences can be admitted.

The same is true of the movements of the table dancing in accordance with the rhythm of certain airs, of its overturnings, of its obedience to the orders given. These facts have been observed precisely as mechanical, physical, chemical, meteorological, astronomical facts have been observed.

To the above reports I will add here a supplementary experiment described in the preface of Count de Gasparin's book:

Certain distinguished savants to whom I had communicated the results we had secured, agreed in assuring me that levitations without contact would have the character of absolute certain proof if we succeeded in verifying them by the following practical device: "Sprinkle flour upon the table," they said, "at the instant your hands have just left it; then produce one or more levitations; finally assure yourselves that the layer of flour bears not the slightest sign of any touch, and all objectors will be dumb."

Why, it is precisely this experiment that we have performed successfully several times. Let me give a few details:

Our first trial had succeeded very badly. We used a coarse sieve which we had to move to and fro over the entire table. This produced the double inconvenience; first, of suspending too long, and so of nullifying the action of the operators; and, secondly, of spreading a layer of flour much too thick. The buoyant spring and impulse of the wills of the operators was abated, the fluidic action was thwarted, the table-top got chilled down, so to speak; nothing moved. The mischief went so far that the table not only refused us levitations and rotations without contact, but almost all the ordinary ones.

Then a brilliant idea came to one of us. We possessed one of those bellows used in blowing sulphur upon vines attacked by the grape-mildew. In place of sulphur. we put flour into it, and, so prepared, began the test.

The conditions were most favorable. The weather was dry and warm, the table went leaping under our fingers, and, indeed, before the order to lift hands had been given, the greater part of the band of us had spontaneously ceased to touch the table-top. Then the command rings out; the whole chain lifts up from the table, and at the same instant the bellows covers its entire surface with a light dusting of flour. Not a second had been lost; the levitation without

contact had already taken place. But to leave no doubt, the thing was repeated three or four times in succession.

That done, the table was scrupulously examined; *no finger had touched it, or even grazed it in the slightest degree.*

The fear of grazing it involuntarily had even been so great that the hands had acted fluidically from a height much greater than in previous sittings. Each one had thought he could not raise his hands too high, and the hands removed to such a distance from the top, had not had recourse to any of the manœuvres or passes of which we had at other times made use. Keeping its place, above the table to be lifted, the chain had preserved its form intact; it had made hardly a perceptible motion in the direction of the movement it was producing at a distance from the table.

I will add, finally that we did not content ourselves with a single experience. A careful inspection following each of several levitations, always showed that the dust-like layer of flour was absolutely untouched; and no portion of the table had escaped its tell-tale coat of white.

The author of these reports himself estimates as follows the results he has recorded:

The phenomena observed confirm and elucidate each other. Large four-legged tables compete with three-legged ones. Inert weights, placed on these, come forward as substitutes for persons suspected of giving a helping hand to the table charged with the task of lifting them. At last the great discovery arrives in its turn: we begin by continuing without contact movements already initiated, and we end by producing them; we succeed almost in creating the process, to such an extent that these extraordinary facts manifest themselves sometimes in an uninterrupted series of fifteen or thirty performances. The glidings round out the subject by throwing light on one phase of action at a distance: they reveal it as powerless (at times) to lift the table, but able to draw it along over the floor.

Such is the rapidly sketched account of our progress. Taken just by itself alone, it constitutes a solid proof and I recommend a study of it to serious men. It is not thus that

error proceeds. Illusions originating in accident, or chance, do not thus resist a long study, and do not pass unmasked through a long series of experiments that justify them more and more.

The reading of numbers in others' minds, and the balance of forces, merit special consideration.

When all the operators but one are ignorant of the number to be materialized by raps, the operation (unless it is fluidic) ought to proceed either from the person who knows the number and furnishes at once the movement and the arrest, or else it ought to proceed from a relation instinctively established between that person who furnishes the arrest and his vis-à-vis who furnishes the movement. Let us examine both hypotheses.

The first is untenable; for, in the case where some one chooses a leg of the table upon which the operator who knows the number can exercise no muscular action, the leg thus designated none the less rises at his command.

The second is untenable; for, in the case where some one indicates a zero, the movement which ought to take place does not do so. Nay more. If you place at loggerheads two persons placed on opposite sides of the table and enjoin each to make a different number triumph, the more powerful operator secures the execution of the chief number although his vis-à-vis is interested not only in not furnishing it to him, but in arresting it.

I know that this matter of the divining of numbers thought of is in bad odor. It lacks a certain pedantic and scientific form. Yet I have not hesitated to insist on it; for there are few experiments in which is better manifested the *mixed character* of the phenomenon,— physical power developed and applied outside of ourselves by the effect of our will. Just because it forms the great offense, or stumbling block, I am unwilling to be shame-faced about it. I maintain, besides that this is just as scientific as anything else. True science is not tied to the employment of such and such a process or such and such an instrument. That which a fluidometer would show would be no less scientifically demonstrated than what is seen with the eyes and estimated by the reason.

Let us go on, however. We have not yet reached the end of our proofs. One of these has always especially struck me: I mean the proof derived from failures.

It is claimed that the movements are produced by the action of our muscles, by involuntary pressure. Now here are the same operators who yesterday secured from the table the fulfilment of their most capricious desires; their muscles are as strong, their vivacity is as great, their desire to succeed is perhaps keener — and yet nothing! absolutely nothing! A whole hour will pass without the least rotation beginning; or, if there are rotations, levitations are impossible to procure; what little is done by the table is done feebly, dismally, and as if reluctantly. I repeat it again, the muscles have not changed; then why this sudden incapacity? The cause remaining identically the same, whence comes it that the effect varies to such a degree?

"Ah!" says an objector, "you are talking of involuntary pressure, and say nothing about voluntary pressure, of fraud, in short. Don't you see that the cheaters may be present at one sitting and not appear at another, that they may act one day and not give themselves the trouble on the next?"

I will reply very simply, and by facts.

"The cheaters are absent when we do not succeed!" But it has happened many a time that our personnel has not been changed in any way. The same persons, absolutely the same, have passed from a state of remarkable power to a state of comparative impotence. And that is not all. If there exists no operator whose presence has preserved us from failures, no more does any exist whose absence has rendered us incapable of success. With and without each one of the members of the chain we have succeeded in performing all the experiments,— all without exception.

But 'the cheaters do not take so much pains every day!' The pains would be great indeed, and those who infer fraud little think what prodigies they are invoking. The accusation is an absurdity which verges on silliness, and its silliness removes its sting. One does not take offense at things like that. But come now, let us suppose for the moment that Valleyres were peopled with disciples of Bosco, that pres-

tidigitation were generally practised there, and that it had been thrust under our very eyes for five months, and under the eyes of numerous and very suspicious witnesses without a single case of perfidy having been pointed out. We have so well concealed our game that we have invented a secret telegraphic code for the experiment of reading numbers, a particular turn of the finger for moving the most enormous masses, a method of gradually lifting tables that we do not seem to touch. We are all liars, all; for we have been mutually watching each other for a long time now, and do not denounce anybody. Nay, more, the contagion of our vices is so swift to take that, as soon as we admit a stranger, a hostile witness, into the chain, he becomes our accomplice; he voluntarily closes his eyes to the transmission of signals, to muscular efforts, to the repeated and prolonged suspicious actions of his next neighbors in the chain! Well and good; suppose we grant all that, we shall not have got farther along for that. It will still remain to be explained why our cheaters sometimes do nothing at the very moment when it would be to their interest to succeed. It has happened, indeed, that a certain sitting at which we had many witnesses and a great desire to convince turned out to be a mediocre one. Such and such another, under the same conditions, was, on the contrary, a brilliant success.

There you have real and important inequalities, and they dare to talk to us of muscular action and of fraud.

Fraud and muscular action! Here for instance is a fine opportunity to put them to the proof. We have just placed a weight on the table. This weight is inert and cannot be accessory to any device. Fraud is all around it perhaps, but it is not in the tubs of sand. This weight is equally divided among the three legs of the table, and they are going to prove it by each one rising in turn. The total load weighs 165 pounds, and we scarcely dare to increase it, for, as it is, it was enough, one day, to break our very solid table. Very well; now let someone try to move this weight. Since muscular action and fraud must explain everything, it will be easy for them to put the mass in motion. Now they cannot do it. Their fingers contract and the knuckles whiten without their obtaining a single

levitation, whereas, some moments later, levitations will take place at the touch of the same fingers, which gently graze the table's top and make no effort at all, as any one may easily convince himself.

Certain very ingenious scientific rules of measurement, for the invention of which I cannot claim the credit, put us in the way of translating into figures the effort which the rotation or levitation of the table demands, when loaded in the way just described. With the above-mentioned weight of 165 pounds, rotation is secured by means of a lateral traction of about 17½ pounds, while levitation is only obtained by a perpendicular pressure of 132 pounds at least (which I will reduce, however, to 110, in deference to the presumed wishes of the critic, and on the supposition that the pressure might not be absolutely vertical). Several deductions are to be drawn from these figures.

In the first place, muscular action may cause the table to turn, but it cannot lift it. As a matter of fact, the ten operators have one hundred fingers applied to its surface. Now, the vertical, or quasi-vertical, pressure of each finger cannot exceed twelve ounces on the average, the chain being composed as it is. They only develop, then, a total pressure of 66 pounds, which is quite insufficient to produce levitation.

In the next place, this striking thing befalls, that the phenomenon which muscular action could easily produce is precisely the one that we most rarely and with the greatest difficulty obtain, and that the phenomenon which muscular action could not compass is the one the most habitually realized when the chain is formed. Why does not our involuntary impulse always make the table turn? Why should not our "fraud" always procure such a triumph? Why, as a general thing, do we only succeed in effecting that which is mechanically impossible?

I advise people who like to make fun of table-turnings not to investigate them too closely, and to beware of giving too careful attention to our supreme demonstration,— that of movements without contact, for it will leave them not the slightest pretext for incredulity.

Thus the fact is established. Multiplied experiments,

diverse and irrefutable proofs, which are, moreover, joined in the closest solidarity, give to the fluidic action the stamp of complete certainty. Those who have had the patience to follow me thus far will have felt their suspicions vanishing one after another, and their faith in the new phenomenon more and more strengthened. They will have made good what we ourselves have substantiated and made good; for no one has opposed more difficulties to table-turning than have we, no one has shown himself more inquisitorial and exacting respecting them.

It is not our fault if the results have been conclusive (and more and more so), nor ours the blame if they have reciprocally confirmed each other, if they have ended by forming one body and taking on the character of perfect evidence. To study, to compare, to repeat and repeat again, and to finally exclude all that admits of doubt or question — this was our duty. Nor have we failed to perform it. I make no affirmations in these reports which I have not proved over and over again.

Such are the memorable experiments of the Count de Gasparin. Their worth will be appreciated by all who read them. I have been anxious to reproduce these careful reports; for they establish of themselves *the absolute and undeniable reality of these movements that contradict the normal law of gravitation.* Let us hear the Count's explanatory hypotheses.

The reader will have noticed the care I have taken to confine myself to the verification of the facts, without hazarding any explanatory hypothesis. If I have employed the word "fluid," it was to avoid circumlocutions. Strict scientific precision would have demanded that I always write "the fluid, the force, or physical agent whatever it may be." I shall be pardoned for having been a little less exact than this in my language. It was enough that my thought was perfectly clear. That we have to do with a fluid, properly so called, in the phenomena of table turning and lifting I cannot absolutely affirm. I affirm that there is an

agent, and that this agent *is not supernatural,* that it is *physical,* imparting to physical objects the movements which our will determines.

Our will, I have said. And this is in fact the fundamental idea we have gathered out of this subject of a physical agent. It is this which characterizes it, and it is this also which compromises it in the eyes of a good many folks. They might, perhaps, be resigned to a new agent, if it were the necessary and exclusive product of the hands forming the chain, if only it were true that certain positions or certain acts insured its manifestation. But this is not the case with it: the mental and the physical must combine in order to give it birth. Here are hands that tire themselves out in forming the chain, and yet obtain no movement: the will has not been mingled in the act. Here is a will that commands in vain: the hands have not been placed in a suitable position.

We have thrown light upon both these sides of the phenomenon, for they are both essential.

Another fact has been noted by us, and ought to enter into a description of the physical agent in question: this agent inheres in the persons and not in the table. Let the operators, when they are in rapport, pass to a new table and encircle it: they will be able immediately to exercise all their authority over it; their will will continue to dispose of the physical agent and to make use of it for rapping numbers mentally selected by persons present or for producing movements without contact.

Such are the facts. The explanation of them will come later. It is, however, very natural to want to find this at once, and to make hypotheses which may be regarded as possible, if not true. I have taken the risk of doing this, and I do not repent of it. Was it not imperative to prove to our opponents that they have not even the pretext of "a scientific impossibility"? Hypotheses have their legitimate place and their utility, even if they are incorrect. If they are admissible in themselves, that is sufficient, for that defends the facts to which they are applied from the accusation of monstrosity. The critic has no longer the right to demand the previous question.

Seeing that it was asked for on all sides, I have risked the following statement:

You assert that our pretensions are false, for the simple reason that they *cannot be* true! Very well. But, at all events, allow me to lay before you certain postulates. Suppose, in the first place, that you do not know everything, that the moral and even the material nature of man have obscurities which you have not been able to remove. Suppose that the smallest blade of grass springing up in the field, that the smallest grain reproducing its kind, that the finger of your hand in the act of executing the order you give it, enclose mysteries that surpass the powers of the learned doctors to fathom, and which they would declare absurd if they were not compelled to recognize them as real. Then, in the second place, suppose that certain men who will so to do, and whose hands are joined one to another in a certain way, give birth to a fluid or to a special kind of force. I do not ask you to admit that such force exists; you will only agree with me that it is possible. There is no natural law opposed to it that I know of.

Now, let us take one more step. The will disposes of this fluid. It gives an impulse to external objects only when we will it, and in quarters selected by us. Would there be anything impossible in this? Is it an unheard-of thing that we transmit movement to matter that is outside of ourselves? Why, we do so every day, and every instant; our mechanical action is nothing more or less than this. The horrible thing in your eyes doubtless is that we do not act mechanically! But there is something besides mechanical action in this world. There are physical causes of movement that are something else than this. The caloric that penetrates a living body produces dilatation there; that is to say, universal movement. The loadstone placed in the neighborhood of a piece of iron attracts it, and makes it leap across the intervening space.

"Yes," some one will exclaim, "we should make no objection, provided your pretended fluid did not obey one special direction in its progress. If it went straight on, as a blind force, well and good! It would then be like the caloric, that dilates everything it meets in its passage. It

would be like the magnet which attracts indiscriminately toward a fixed point all the particles of iron in its vicinity. As for you, your invention of the theory of a rotative fluid calls vividly to mind the explanation of the dormitive properties of opium."

It is impossible to more completely misunderstand things. No one dreams of a "rotative fluid." All we maintain is, that, when the fluid is emitted and imparts either repulsion or lateral attraction to a piece of furniture resting on legs, a very simple mechanical law transforms the lateral action into rotation.

I do not say, "The tables turn because my fluid is rotative." I say, "The tables turn, because, when they receive an impelling force or undergo an attraction, they cannot help turning." Stated in this way, it is a little less naïve. Consequently, I should be under no obligation to undertake the cause of the poor university scholar of the *Malade Imaginaire,* and defend his famous reply: "*Opium facit dormire quia est in eo virtus dormitiva*" ("opium puts people to sleep because it has the sleep-producing virtue or property"). Nevertheless, I can't help it, out it must come: I find the reply an excellent one. I doubt whether the savants have found a better one to this day, and I advise them to resign themselves sometimes to the following kind of reasoning: "Opium puts us to sleep because it puts us to sleep; things are because they are." In other words, I see the facts and do not know the causes. I do not know. "I do not know!" terrible words, which one finds difficulty in pronouncing! Now, I suspect very strongly that the sly roguishness of Molière is for the benefit of the doctors, who pretend to know everything, invent explanations which do not explain, and do not know how to accept the facts while waiting for more light.

But there is more to come. The hypothesis of the fluid (a pure hypothesis, remember) must still prove that it is a hypothesis reconcilable with the different circumstances of the phenomenon. The table does not merely turn: it lifts its legs up, it raps numbers mentally indicated to it; in a word, it obeys the will, and obeys it so well that the removal of contact does not terminate its obedience. The impelling

force or lateral attraction which account for rotations cannot account for levitations.

But why? Because the will directs the fluid now into one leg of the table, now into another. Because the table identifies itself with us, after a fashion, becomes a limb of our own body, and produces movements thought of by us in the same manner as our arm produces them. Because we have no conscious knowledge of the direction imparted to the fluid, and govern the movements of the table without imagining that any kind of fluid or force whatever is in action.

In all our acts, in all without exception, we have no consciousness of the direction imparted by our will. When you explain to me how I lift my hand, I will explain to you how I make the table-leg rise from the floor. I "willed to raise my hand." Yes, and I also willed to lift this table-leg. As for the executing of the mandates of the will, the putting into play of the muscles required to lift the hand, or of the fluid-power required to lift the table-leg, I have no knowledge of what passes in me apropos of this. Strange mystery, and one which ought to inspire in us a little modesty! There is in me an executive power, a power of such a nature that, when I have willed such or such an act, it addresses detailed orders to the different muscles and sets in motion a hundred complicated movements to bring about a final result which has been merely thought of, merely willed. That miracle goes on within me, and I understand it not at all, and never shall understand it. Do you not agree that the same executive power can give to the fluid the directions it gives to the muscles? I have willed to play a sonata on the piano, and, unknown to me, something within me has given orders to hundreds of thousands of muscular acts. I have willed that the leg of this table should be lifted up, and, unknown to me, something within me has directed the attractions and impulsions of the fluid to the designated place.

The hypothesis of a fluid is, then, defensible. It accords with the nature of things and with the nature of man. I have no wish to go farther and furnish at once a definitive explanation. But I am not worrying. Let the facts once

be admitted, and explanations will not be wanting. What seems impossible now will seem very simple then. About incontestable things no trouble is made. We are so constituted that, after we have asserted the impossibility of everything we do not comprehend, we declare comprehensible all that we have recognized as real. People are everywhere to be met with who shrug their shoulders when you speak to them of table-turnings and who make nothing of the Puck-like performance of the electric current in putting the girdle of its circuit around the earth in the fraction of a moment, and who find the miracle of the transmission of the mental and moral qualities of the fathers to the children a very simple thing to understand! The tables of the psychic experimenter cannot escape the common lot. Their phenomena, absurd to-day, are to-morrow self-evident.

These experiments of Count de Gasparin and his associates have been known for over half a century, and it is really incomprehensible that even the fact of the levitation of tables and of their movements has continued to be denied. Verily, if the tables are sometimes light, it must be confessed that the human race is a little heavy.

As to the theory, the hypothesis of the fluid,— *felix qui potuit rerum cognoscere causas* (Happy the man who can know the cause of things)— I shall return to this matter in the chapter on explanatory theories. But it is incontestable that, in such experiences, we act by means of an invisible force emanating from us. One must be blind not to admit that.

After a series of experiments so admirably conducted we can understand that the author might well be allowed to indulge in a little derision of obstinately prejudiced unbelievers. In closing this chapter, I cannot forego the pleasure of citing Count de Gasparin apropos of the learned negations of Babinet and his emulators of the Institute.

The savants are not the only ones to stand on their dig-

nity. I also stand on mine, and I make bold to think that a certificate signed with my name would not be rated by anybody as a piece of imposture or frivolity. It is known that I am in the habit of weighing my words; it is known that I love the truth, and that I will not sacrifice it on any consideration; it is known that I prefer to admit an error rather than persist in it; and when, after a long-continued inquiry, I persist with a firmer and profounder conviction than ever, the import or scope of the declaration I make is not to be misapprehended.

I can tell you, in the next place, that the testimony of the eyes has, in my opinion, a scientific value. Independently of instruments and figures, on which I set the highest values, I believe that the true *seeing* of things may serve. I believe that this also is of itself an instrument. If a sufficient number of good pairs of eyes have ascertained and proved, ten, twenty, a hundred times, that a table is put in motion without contact; if, furthermore, the explanation of the fact by fraudulent or involuntary contacts passes the limits which must be assigned to incredulity, the conclusion is clear. Nobody is warranted in crying out: "You have neither fluidometer nor alembic; you do not give a specimen of your physical agent in a bottle; you do not describe how it acts upon a column of mercury or upon the dip of a needle. We don't believe you, for you have done nothing but see."

"I do not believe you because you have done nothing but see!" "I do not believe you because I have not seen with my own eyes!" So many pedants, so many objections. They hardly take the trouble to agree among themselves; in a war waged against the tables any weapon is fair, nothing comes amiss.

I do not wish to forget that scientists were still talking only of rotations at the moment when Faraday invented his disks.* In the presence of a phenomenon so inadequate, and, let us admit it, so suspicious, we can understand how

* The allusion is to Faraday's explanation of Arago's discovery in the magnetism of rotation. Faraday showed that a rotating disk of non-magnetic metal would draw after it in similar rotation a magnetic needle suspended over it, and even a heavy magnet. See Professor Tyndall's *Faraday as a Discoverer*, pp. 25, 26.—*Trans.*

the savants showed themselves sceptical and contented themselves with flimsy refutations. They proportioned the number and size of their weapons to the appearance of the enemy. The one among them who showed the most penetration, and who proposed the most plausible explanation, is most assuredly Chevreul. His theory of the tendency to movement is incontestably true. It explains how the objects we suspend from our finger finally take a vibratory movement in the direction indicated by our will. I am not astonished that some have thought this theory sufficient to explain how experimenters can, in the end, impart a rotation to the table and participate in the movement themselves. I need not say that our proved levitations of weights, and our movements without contact, will not henceforth permit anyone to take refuge in such an explanation. If all the tendencies to movement were united into one they would not be able to produce at a distance an impelling power, nor move a mass that mechanical action could not set in motion.

Really, the learned doctors ought not to throw out to the public these explanations which do not explain. They ought rather to get to work and show us, in fact, how to set about the lifting directly and mechanically of a weight of 220 pounds without applying to the task a force of 220 pounds.

But they prefer to use insulting expressions, and then proceed to invent some theory or other which has only one little fault — that it has no legs to walk with. The recent article of M. Babinet in the *Revue des Deux Mondes* is a masterpiece in its way. If I needed to be convinced of the reality of the phenomena of table-turning, etc., I should most assuredly have been convinced by the reading of this refutation of it.

In the opinion of M. Babinet, the phenomena of the tables offer no difficulty whatever! Happy science of physics, happy science of mechanics which has an answer ready for everything! We poor, ignorant fellows thought we had detected something extraordinary, and did not know we were merely obeying two extremely elementary laws,— the law of unconscious movements, and, above all, that of nascent

movements, movements the power of which seems to surpass that of developed movements.

As far as regards unconscious movements, M. Babinet adds nothing to previous explanations — nothing but the story of that lord (an English lord, he says) whose horse was so admirably trained that it seemed as if it were only necessary for one to think the movement one wished to have him execute, and he instantly realized it. I am thoroughly convinced, as is M. Babinet, that the aforesaid lord gave an impulse to the bridle without suspecting it, and I am just as thoroughly convinced that the experimenters whose hands are touching a table may exert a pressure of which they are not conscious. Only — I think there should be some proportion between the cause and the effect. Suppose the movements are unconscious: they are none the less vigorous for all that. The burden is upon M. Babinet and his followers, to prove that the very same fingers that in vain clench themselves till they are stiff in the endeavor to lift a weight of eighty-eight pounds, will lift double this weight by simply being unconscious that they are making any effort.

My honorable and learned opponent will not hear of movements obtained without contact. "Everything that has been said about action exercised at a distance ought to be banished to the realm of fiction." The judgment is curt and summary. Movements without contact are a fiction,— first because they are impossible; secondly because powdered soapstone has hindered the rotation of a table; and, finally, because perpetual movement is impossible.

Movements at a distance are impossible! To be strictly logical, M. Babinet ought to have stopped there, remembering the reply made by Henry IV to the magistrates who had thus begun an address to him:

"We did not give a salute of cannon on the approach of Your Majesty, and that for three good reasons. In the first place, because we had no cannon —"

"That reason is sufficient," said the king.

We are fain to believe that M. Babinet himself has little doubt about his "impossibility." He has acted wisely in doing so; for this impossibility is based entirely on a

vicious circle of reasoning. "Is there a single known example of movement produced without a force acting from the outside? No. Well, movement at a distance would very plainly take place by an active external force. Therefore movement at a distance is impossible." I feel very much disposed to say to M. Babinet, in the technical language of the schools, that his major premise is true and that his conclusion would be legitimate if his minor were not purely and simply a begging of the question. You claim that there is no active force exterior to the table which lifts it without the touch of the hands. But that is precisely the point at issue between us. A fluid is an external active force. It is handy for my critic, indeed, to begin by establishing this axiom. Now (he says), there is no fluid, or analogous physical agent, in the case of the tables; *therefore* there is no effect produced.

The learned gentlemen, Faraday, Babinet, and others, do not limit themselves to objections derived from nascent or unconscious movements, small causes producing great effects. They have still another method of proceeding. If an experiment has succeeded it has no longer any value. Oh, if one could succeed in performing such another experiment, well and good! But this would not hinder the new experiment from becoming insignificant in its turn and giving place to a new desideratum. The phrasing runs somewhat in this way:

"You are doing such and such a thing. Very well; but now let us see you do a different thing. You are employing such or such a method; be pleased to be contented with those which we prescribe you. To succeed in your way is not enough; you must succeed in ours. Your way is not scientific; it runs contrary to the traditions. We shut the door in the face of facts if they do not come in the regulation claw-hammer coat of full dress. We shall pay no attention to your experiments if our experimental apparatus does not figure in them."

Strange way of verifying and establishing the results of experiments! You begin by changing the conditions under which they are produced. You might as well say to the man who has seen the harvesting of barley in Upper Egypt

in January, "I will believe it when I see it done before my eyes in Bourgogne." One can understand, of course, how an unreasonable and troublesome fastidiousness might be shown regarding travellers' tales. But scientific experiments are of another character. In the presence of facts so evident, it is almost incredible that they wish to impose upon us instruments, needles, and mechanical devices. The idea of introducing *becauses* and *therefores* into an investigation in which the real nature of the acting force is a mystery to all the world!

Polemical essays are not scientific studies. In general, they are the direct opposite. When persons who have seen nothing, who have not devoted any considerable portion of their energy and time to experimentation, who have perhaps been present only at some ridiculous rotations of centre-tables, take their pen in hand for the purpose of exposing theories or giving lofty reprimands to experimenters, I do not look at them in the light of scientific students.

I am convinced that a man never really studies that which he declares *a priori* to have no sense in it. If attacks are studies, there is no lack of them, and (I may add) never will be. At the time when the Academy of Medicine buried the report of M. Husson and published what everybody in Europe persisted in calling a refusal to examine, there was issued every morning a paper against magnetism; every morning some new writer vociferated that the partisans of magnetism were imbeciles, and proposed an explanatory system of his own. If you call that making a study, then I grant that they have studied table-turnings, for there certainly has been no dearth of insults and of theories about these phenomena. They have received every attention, except that no one was willing to inspect, experiment, listen, and read.

Twice, a month apart, the Institute has announced (without protest from anybody whatever) to the students of table-turnings that it was shelving papers relating to that topic; that it was not obliged to occupy itself with nonsense; that there was a place in its archives for lucubrations of that kind; namely, the place to which were consigned papers on perpetual motion.

Oh, Molière! why are you not present with us? But, in reality, you are here. Your genius has limned with ineffaceable lines that everlasting disease of venerable big-wigs and mouldy specialists,— disdain of the laity, respect for their fellow-members, idolatry of the past. A most singular deformity, this! And it appears in all ages, in various disguises, in the midst of all branches of human activity, now in the name of religion, now in that of medicine, and again in the name of science or of art. Yes, even surviving the wreck of revolutions which spare nothing, appearing even within the walls of learned academies the members of which write for the furtherance of the great movements of modern progress, one thing remains,— the spirit of partisanship, of cliques, the spirit of tradition, the superstitious regard for forms.

Really, it would seem as if people must be still taking Bible oaths like those in the baccalaureate ceremony at the end of Molière's *Malade Imaginaire*. M. Foucault is fond of this scene, and will therefore not take it ill if I recall to his mind a couple of stanzas:

Essere in omnibus
Consultationibus
Ancieni aviso,
Aut bono,
Aut mauvaiso.
— JURO!

De non jamais te servire
De remediis alcunis
Quam de ceux soulement doctæ facultatis,
Maladus dut-il crevare,
Et mori de suo malo.
— JURO! *

* The long scene from which this is taken in Molière is so full of Italian, Old French, and dog Latin, that it has not been translated by Van Laun. All but the last word (*juro*) of each stanza is spoken by the big-wigs in this mock examination of a baccalaureate medical student; that word is his:

"Do you swear that in all consultations you will be of the ancient opinion, whether it be good or bad?"—"I swear it."—"To never make

If you don't call that a refusal to examine, I don't know what the words mean in good French.

With such ingenious candor and with such authority did the Count Agénor de Gasparin express himself in the year 1854. It seems to me that the experiments made known in this volume furnish abundant evidence that he is right.

Yet I have still friends, at the Institute, who smile with the utmost scorn when I ask their opinion on the phenomena of the levitation of tables, the movement of objects without perceptible cause, unexplained noises in haunted houses, communication of thought at a distance, premonitory dreams, and apparitions of the dying. Although these unexplained phenomena have undeniably been proved to be facts of occurrence, those learned friends of mine remain convinced that "such things as that are impossible."

use of any remedies except those of the learned faculty of medicine, even should the patient burst and die of his disease?"—"I swear it."—*Trans.*

CHAPTER VII

THE RESEARCHES OF PROFESSOR THURY

The insufficient explanations of Chevreul and of Faraday, the scientific negations of Babinet, the conscientious experiments of the Count de Gasparin had led several scientists to study the question from the purely scientific point of view. Among them was a highly-gifted savant whom I visited at Geneva,— M. Marc Thury, professor of natural history and of astronomy in the Academy of that city. We are indebted to him for a remarkable and little known monograph,* which it is my duty to condense for this volume.

When we were in the presence of new phenomena (writes Thury) there was only one alternative:

First, either to reject, in the name of common sense and of the results acquired by science, all the pretended phenomena of tables as so many childish sports unworthy of taking up the time of the true scientist or scholar, since, on the very face of it, their absurdity is evident; in short, to let the matter drop by refusing to give it serious attention.

Or, second, to make a determined examination of it at whatever cost, to study the fact in its details in order to lay fully open all the sources of illusion by which the public is duped, separate the true from the false, and throw a strong light on all aspects of the phenomenon, physical, physiological, and psychological, in order that the matter may be so superabundantly clear and evident that no further excuse for doubt may remain.

* *"Les Tables tournantes," considérés au point de vue de la question de physique générale qui s'y rattache. Genève, 1855.*

Superfluous to say, the last method is the one adopted by Thury (as it was by Gasparin). He considers it to be the only suitable, efficient, and legitimate method.

Darkness saps the strength of science. Its strongest hold lies in bringing everything out into the full light of day. Here, then, lies the question: In these curious phenomena of the tables, is the explanation so clear that you can lay a finger on the causes of illusion and clearly show that there is in them no new and unknown element at work?

I do not think (replies the Genevan professor) that we have attained to that degree of evidence. I wish only one proof, the explanation of what has already been attempted.

If, then, it is well established that the common explanation is not self-evident, in the eyes of all intelligent and sensible men, there remains a task to do, a duty owed to science,— that of throwing full light upon the phenomenon in question; and this task cannot be exchanged for the easier one of treating with irony or disdain those who have gone astray in the path that Science refused to illuminate.

The savants are, however, excusable for not going too quick (let us admit with Thury).

What! a perturbative force lurking, by the hypothesis, in the human organism sufficiently powerful to lift tables, and which yet had never produced the slightest derangement in the thousands of experiments that physicists are daily making in their laboratories! Their balances, responsive to the weight of a tenth of a milligram, their pendulums whose oscillations take place with mathematical regularity, had never felt the slightest disturbing effect of these forces, whose source is there present wherever there is a man and a volition! Now, it is the ardent wish of the physicist that the experiment shall always exactly tally the forecasts of theory. Must he then admit an unknown disturbing force?

And, even without going outside of the limits of the hu-

man organism, think, if the organism is unable to move the smallest part of itself when the part is deprived of muscles and nerves, or, when a single hair of our head is absolutely withdrawn from the influence of the will — think, I say, how much less (and with how much stronger reason) that nervous organism of ours would seem to be able to move inert bodies residing outside the limits of our own frames!

But, if there is a profound improbability in the thing, still, we cannot say that it is impossible. No one can show *a priori* the impossibility of the phenomena described, as they demonstrate the impossibility of perpetual motion or the squaring of the circle. Consequently, no one has the right to treat as absurd the evidences which tend to confirm the experiments. Provided these evidences are furnished by judicious and truthful men, then they are worth the trouble of examination. If this logical course had been followed — the only true and equitable one,— the work would now have been done, and the learned men would have the glory thereof.

Thury begins by examining the experiments of Count de Gasparin at Valleyres.

The experiments of Valleyres (he writes) tend to establish the two following principles:

1. The will, in a certain condition of the human organism, can act, from a distance, upon inert bodies, and by an agency different from that of muscular action.

2. Under the same conditions, thought can be communicated directly, though unconsciously, from one individual to another.

As long as we were ignorant of any other facts than those resulting from a movement effected by contact with the fingers of the hand, in a way in which the mechanical action of the fingers became possible, the results of the experiments upon the table were always of difficult and doubtful interpretation. These results had to be necessarily based upon an estimate of the mechanical force exerted by the hands

compared with the strength of the resistance to be overcome. But the mechanical force of the hands is difficult to measure exactly, under the conditions necessary to produce the phenomena.

Yet over and above that plan of work there remained two methods of operation to employ.

a. So to dispose the apparatus employed that the movement to be produced shall be one that the mechanical action of the fingers could not compass.

b. To set up movements at a distance without any kind of contact.

The following were our first experiments:

A. *Mechanical action rendered impossible.* The first experiment attempted along this line gave wholly negative results. We suspended a table by a cord that passed over two pulleys fixed in the ceiling and had a counter-weight attached to the free end. It was easy, by regulating this counterpoise, to balance in the air either the total weight of the table or only a fraction, more or less great, thereof.

As a matter of fact, the table hung almost in equilibrium with the weight, one only of its three legs touching the floor. The operators placed their hands upon the top surface. We acted at first in a circular direction, a disposition of the force the efficacy of which had been established by previous experiments. We then tried in vain to lift the table by detaching it from the floor. No positive result was obtained.

We had already (during the previous year) had a table suspended to a dynamometer, and the efforts of four mesmerizers were powerless to relieve the dynamometer of an appreciable fraction of the weight of the table.

But the conditions necessary for the production of the phenomena were still unknown to us, and, consequently, when the experiments tried led to negative results, we had to try others, without pressing too hastily for inferences and conclusions. It was thus that we secured the results which I am going to describe.

Experiment with the Swinging Table.— We needed a piece of apparatus of such a kind that the mechanical action of the fingers would be rendered impossible. For this purpose we had a table made with a top about 33 inches in

diameter, and a central trifurcated leg underneath. This table bore a close resemblance to the one which had served our purposes up to that time, and could turn like its predecessor. Still, the new table was capable of being transformed in a moment into a mechanism such as I shall now describe.

The summit of the tripod becomes the fulcrum of a lever of the first order which is able to balance freely in a vertical plane. This lever, whose two arms are equal to each other and to the radius of the table bears at one of its extremities the table-top, held by the edge, and, toward the other extremity, a counterpoise which just balances the weight of the table, but which can be modified at will. To the under side of the table-top is fastened a leg resting on the floor.

After the necessary preliminary rotations, the table is harnessed up in its second form. Equilibrium is first secured, then 3-5 of a pound is taken from the counterpoise. The force required to lift the top by its centre is then 4 ounces, and previous experiments have proved that the adherence of the fingers of the operators (the top was polished, and not varnished), together with the possible effects of elasticity, form a total lower than that figure. Yet the top is lifted by the action of the fingers placed lightly on its upper surface, at a certain distance from the edge. Then the counterpoise is diminished; the mechanical difficulty of lifting is augmented, yet still it takes place. The weight is again diminished, and more and more, up to the limit of the apparatus. The force necessary to lift the top is then 8 1-5 pounds, and the counterpoise has been relieved of 24 pounds; yet the levitation is easily accomplished. The number of the operators is gradually lessened from eleven to six. The difficulty goes on increasing, yet six operators still suffice; but five are not enough. Six operators lift 9 1-3 pounds,— an average for each man of about 1½ pounds.

We now possess, in the apparatus just described, a gauge or instrument of measurement.

B. The following movements were produced without contact:

The table on which were made the trials I witnessed has

a diameter of 32 inches and weighs 31 pounds. An average tangential force of 4 2-5 pounds, which may be raised to 6 3-5 pounds, according to the greater or less inequalities of the floor, applied to the edge of the table, is necessary to give to it a movement of rotation. Ten is usually the number of persons who operate about this table.

In order to assure ourselves of the absence of all contact, we placed our eye on a level with the table in such a way as to see light between our fingers and the surface of the table, the fingers themselves remaining a little less than an inch above the top. Usually, two persons would be observing at once. For instance, M. Edmond Boissier was observing the legs of the table, while I was watching the top. Then we exchanged rôles. Sometimes two persons took places at the extremities of one and the same diameter, the one opposite the other, for the purpose of watching the top of the table. Several times we saw it move, although we could not detect the slightest touch by the fingers. According to my calculations, it would require the contact of at least 100 fingers, or the light pressure of thirty, acting voluntarily and fraudulently, to explain in terms of mechanics the movements we observed.

Much more frequently still we obtained balancings without contact, balancings which sometimes went so far as to tip the table entirely over. To explain in terms of mechanical movement the effects we observed, we should have to admit the involuntary contact of 84 fingers, or the light pressure of 25, or two hands acting with intent to deceive. But these suppositions, also, are not at all admissible.

Nevertheless, we always felt that someone might present the objection that it was difficult to observe these operations with precision, and we were constantly urging M. Gasparin to convince the doubters and sceptics in the matter of the non-contact of the fingers by means of some mechanical device. Out of this arose the last experiment made at that time, and the most conclusive of all. A light film of flour was almost instantaneously spread over the table by means of a sulphur bellows such as is used in vineyards. The movement of the chain of hands above the table set it whirling. Then the film of flour was examined

and found to be inviolate from the touch of hands. Several repetitions on different days always gave the same results.

Such are the principal facts which establish the reality of the phenomenon. Thury next takes up the more difficult investigation of courses.

The Seat of the Force.— It is possible that the force which produces the phenomena is a general telluric force which is merely transmitted by the operators or set in action by them; or, possibly, the force resides in the operators themselves.

To decide this question, we had a large movable platform constructed which revolved on a perfectly vertical axis. Near the outer periphery of the platform stood four chairs, and there was a table at the centre. Four operators, experts in nervo-magnetic action, took their places on the chairs, and, placing their hands on the table in the centre, tried to give it circular movement by non-mechanical power. In fact, the table soon began to move. Then it was stopped and fastened to the platform by means of three screws. The effort exerted upon this table by the four magnetizers was such that, at the end of three-quarters of an hour of experimentation, the central supporting leg was broken. Yet the movable platform did not turn. The tangential force required to mechanically move the empty platform was only a few grams; loaded with the four operators, 250 grams was necessary, applied about 28 inches from the centre. This figure would have been much less if it had been possible to distribute the weight of the operators uniformly.

The result of this experiment (of June 4, 1853) showed that the force which tends to make the table turn is in the individuals and not in the ground. For the force exerted upon the table tends to draw along the platform with it. If, then, the platform remains motionless, it must be that an equal and contrary force is exerted by the operators. It is therefore in them that the base of the seat of the force resides. If, on the contrary, this force had emanated,

wholly or in large part, from the ground, if it had been a force directly telluric, the platform would have turned, the effort which the table exerted upon it being no longer counterbalanced by an equal reaction proceeding from the individuals.

Conditions of the Production and Action of the Force.— I have said that the conditions for the production of the force are little known. In the absence of precise laws, I shall present what has been verified in a greater or less degree in the case of the three following points:

a. Conditions of action relative to the operators.

b. Conditions relative to the objects to be moved.

c. Conditions relative to the mode of action of the operators upon the objects to be moved.

The Will. The first and the most indispensable condition, according to M. Gasparin, is the will of the operator. "Without the will," he says, "we obtain nothing; we might sit there in chain twenty-four hours in succession without getting the slightest movement." Farther on, the author speaks, it is true, of unexpected movements different from those which the will prescribes; but it is evident that he is referring to a necessary combination of prescribed movements and external resistances, the effective movements being the *resultant* of those that have been willed and of forces of resistance developed in external objects. In short, the will is always the prime mover and originator.

Nothing, it is true, in the experiments at Valleyres gave any authority for believing that it could be otherwise than this. But it is also certain that this purely negative result, or provisional generalization, deduced from a limited number of experiments,— cannot invalidate the results of experiments inconsistent with those, in case such should exist. In other words, the will may ordinarily be necessary, without always being so. Similarly, contact is ordinarily necessary, and *always* has been so with a large number of operators, without, however, giving them the right to conclude that contact is the indispensable condition of the phenomenon, and that the different results obtained at Valleyres were only illusions or error.

Since we are dealing here with a point of capital im-

portance, I shall take the liberty of stating with some detail circumstances which seem opposed to the thesis maintained by M. Gasparin. These facts, or data, have as guarantee the testimony of a man whom I should like to be able to name, because his scientific culture and his character are known of all men. It was in his house and under his eyes that the events took place which I am going to relate.

At the time when everyone was amusing himself with making tables turn and speak, or in directing the motions of lead-pencils, fixed in movable sockets, over sheets of paper, the children of the house amused themselves several times with this sport. At first, the responses obtained were such that you could see in them a reflex of the unconscious thought of the operators, a "dream of waking performers." Soon, however, the character of the replies seemed to change. It seemed as if what they revealed could hardly have emanated from the mind of the young interrogators. Finally, there was such an opposition to the commands given that M. N., uncertain as to the true nature of these manifestations in which a will different from the human will *seemed* to appear, forbade their being called forth again. From that time forth, sockets and table rested undisturbed.

A week had scarcely rolled by, after the events just narrated, when a child of the family, he who had formerly succeeded best in the table experiments, became the actor, or the instrument, in strange phenomena. The boy was receiving a piano-lesson, when a low noise sounded in the instrument, and it was shaken and displaced in such a way that pupil and teacher closed it in haste and left the room. On the next day, M. N., who had been informed of what had happened, was present at the lesson, given at the same time,— namely, when the dusk was coming on. At the end of five or ten minutes he heard a noise in the piano difficult to define, but which was certainly the kind of sound one would expect a musical instrument to produce. There was something about it musical and metallic. Soon after, the two front legs of the piano (which weighed over six hundred and sixty pounds) were lifted up a little from the floor. M. N. went to one end of the instrument and tried to lift it. At one time it had its ordinary weight,

which was more than the strength of M. N. could manage; at another, it seemed as if it had no longer any weight at all, and opposed not the least resistance to his efforts. Since the interior noises were becoming more and more violent, the lesson was brought to a close, for fear the instrument might suffer some damage. The lesson was changed to the morning and given in another room situated on the ground floor. The same phenomena took place, and the piano, which was lighter than the one up-stairs, was lifted up much more; that is to say, to a height of several inches. M. N. and a young man nineteen years old tried leaning with all their might on the corners of the piano which were rising. Then one of two things happened: either their resistance was in vain, and the piano continued to rise, or else the music-stool on which the child sat moved rapidly back as if pushed or jerked.

If occurrences like that had only taken place once we might think that the child or the persons present were laboring under some illusion. But they were repeated a great number of times, for a fortnight, in the presence of different witnesses. Then, one day, a violent manifestation took place, and thenceforth no unusual event occurred in the house. At first, it was in the morning and in the evening that these perturbations manifested themselves; then, invariably at any and all hours, they occurred every time the child took his seat at the piano, after five or ten minutes of playing. The phenomena happened only with this boy, although there were others present (musicians); and it made no difference which of the pianos in the house he used.

I saw these instruments. The smaller, on the ground floor, is a rectangular horizontal piano. According to my calculations, a force of about 165 pounds applied to the edge of the case, beneath the key-board, is necessary to lift this piano as it was lifted by the unknown force. The instrument in the first story of the house is a heavy Erard piano, weighing, with the packing-box in which it was sent, 812 pounds, as stated in the way-bill, which I myself saw. According to my approximate calculations a pressure of 440

pounds is required to lift this piano, under the same conditions as the first was lifted.

I do not think that anyone will be tempted to attribute to the direct muscular effort of a child eleven years old the lifting up a weight of 440 pounds.* A lady who had attributed the effect produced to the action of the knees passed her own hand between the edge of the piano and the knees of the child, and was thus able to convince herself that her explanation had no foundation in fact. Even when the child got upon his knees upon the piano-stool to play, he did not find that the perturbations he dreaded ceased any the more.

These authenticated facts of Professor Thury are at once precise and formidable. What! two pianos rise from the floor and jump about! What do the physicists, the chemists, the learned pedants in office need, then, to arouse them from their torpor and make them shake their ears and open their eyes? What shall be done to remove their noble and pharisaical indolence?

But, happen what may, no one is occupying himself with the fascinating problem as stated, except scattered investigators who are freed from the fear of ridicule and are aware of the exact value of the human race, in large and small, and the worth of its judgments.

M. Thury next discusses the explanation based on "the will."

Did this boy (he says) *will* what took place, as the theory of M. de Gasparin would require us to admit? Accord-

* *The dynamic force* necessary to produce this uplift, if we admit that it was developed and accumulated during the five or ten minutes of playing that preceded the phenomenon, would not, on the other hand, be beyond the strength of the child; it would remain even much beneath the limit of his powers. In general, the force expended, in these phenomena of the tables, if one may judge by the degree of fatigue experienced by the operators, much surpasses what would be required to produce the same effects mechanically. There is, therefore, in this respect, no reason for admitting the intervention of a force foreign to the boy's own nature.—(*Thury.*)

ing to the boy's testimony, which we believe to be wholly true, he did not will it; he seemed to be visibly annoyed by what occurred; it disturbed his custom of industriously practicing his lesson and offended his taste for regularity and order, a thing well known to his intimates. My personal conviction is that we positively cannot admit, in the case of this lad, a conscious will, a settled design, to produce these strange occurrences. But it is known that sometimes we have a double personality, and one of them converses with the other (as in dreams); that our nature then unconsciously desires what it does not will, and that between will and desire there is only a difference in degree rather than in kind. It would be necessary to have recourse to explanations of this kind,— too subtle, perhaps,— in order to square these piano-facts with the theory of M. Gasparin; and it would still be necessary to modify and enlarge the facts if you admit that *even unconscious desire* suffices, in the absence of the expressed will. There is, then, reason for doubt on this essential point. That is the sole deduction that I wish to draw from the events I have related.

This levitation, equivalent to an effort exerted of 440 pounds, has its scientific value. But how could the will, conscious or unconscious, lift a piece of furniture of that weight? By an unknown force which we are obliged to recognize.

Preliminary Action.— Power is developed by action. The rotations prepare for the tippings and the levitations. The rotations and the tippings, with contact, seem to develop the force necessary to produce the rotations and tippings without contact. In their turn, the rotations and the tippings without contact prepare for the production of true levitations, such as those of the swinging table; and the persons who have this latent force awaked in them are better fitted to appeal to it a second time.

There is, then, a gradual preparation required, at least for the majority of operators. Does this preparation consist in a modification that takes place in the operator, or in

the inert body on which he acts, or in both? In order to resolve this problem, experimenters who had been practicing at one table went over to another, operating on which they found their full power unabated. The preparation therefore consists in a modification that takes place in the individuals, and not in the inert body.* This modification occurring in individuals is dissipated rather rapidly, especially when the chain of experimenters is broken.

Inner Development of the Operators.— It is only after a certain period of waiting that the operators, who have not so far acted, cause even the easiest movement,— that of rotation with contact. It is during this time that the force, or the conditions determining the manifestation of the force, develop themselves. From that time on, the developed force has nothing to do but to increase. That which takes place, therefore, in this time of waiting, is a very important thing to be considered. We already know that it is the operators themselves who are modified. But what is it that takes place within them?

It must be that a kind of activity is set up in the organism, an activity which ordinarily requires the intervention of the will. This activity, this work, is accompanied by a certain fatigue. The action is not aroused in all operators with equal ease and promptness. There are even persons (the author estimates their number at one in ten) in whom it appears that it cannot be produced at all.

In the midst of this great diversity of natural aptitudes, it is observed that children "can secure obedience from the table just like grown folks." Nevertheless, children do not magnetize. Thus, although several facts seem to show that magnetizers (or mesmerizers) have frequently a strong power over the tables, yet one cannot admit the identity of magnetic power and power over the tables; the one is not the measure of the other. Only, the magnetic power would constitute (or presume) a favorable subjective condition.

* In the first experiments of Thury, eight persons remained an hour and a half standing, and then seated, around a table, without obtaining the least resulting movement. Two or three days after, on their second trial, the same persons, at the end of ten minutes, made a centre-table revolve. Finally, on the 4th of May, 1853, at the third or fourth trial, the heaviest tables began to move almost immediately.

A will simple and strong, animation, high spirits, the concentration of the thought upon the work to do, good bodily health, perhaps the very physical act of turning around the table, and, finally, everything that can contribute to unity of will-power among the experimenters,— all these things help to make efficacious the commands addressed to the table with force and authority.

The tables (says M. de Gasparin) "wish to be handled gaily, freely, with animation and confidence; they must be humored at the start with amusing and easy exercises." The first condition necessary for success with the table is good health and the second, confidence.

Among unfavorable circumstances, on the other hand, must be reckoned a state of nervous tension; fatigue; a too passionate interest; a mind anxious, preoccupied or distracted.

The tables — M. de Gasparin further says, in his metaphorical language —"detest folks who quarrel, either as their opponents or as their friends." "As soon as I took too deep an interest, I ceased to command obedience." "If it happened that I desired success too ardently, and showed impatience at delay, I no longer had any power of action on the table." "If the tables encounter preoccupied minds or nervous excitement, they go into a sulking mood." "If you are touchy, over-anxious . . . you can't do anything of any value." "In the midst of distractions, chatterings, pleasantries, the operators infallibly lose all their power." Away with salon experiments!

Must one have faith? It is not necessary; but confidence in the result predisposes to a larger endowment of power in the séance of the occasion. It does not suffice to have faith; there are persons who have faith and good will, yet with whom power of action is altogether wanting.

Muscular force or nervous susceptibility do not seem to play any rôle.

Meteorological conditions have seemed to exercise some influence, probably by acting upon the physique and the spirits of the operators. Thus fine weather, dry and warm weather (but not a suffocating heat) act favorably.

The especially efficacious influence of dry heat upon the

surface of the table * will perhaps receive a different explanation.

Unconscious Muscular Action, produced during an especially Nervous Condition.— So long as only movements with contact were known, in which the movement observed was one of those which muscular action might produce, explanations based on the hypothesis of unconscious muscular action were certainly sufficient and much more probable than all the other explanations which had been up to that time proposed.

From this point of view (entirely physiological) it is settled that we must distinguish between the effort which a muscle exerts and the consciousness we have of this effort. It will be remembered that there exist in the human organism a great number of muscles that habitually exert considerable effort without our being in the slightest degree aware of it. It has been pointed out that muscles exist whose contractions are perceptible by us in a certain state of the system and unperceived in another state. It is therefore conceivable that the muscles of our limbs might as an exceptional thing, exhibit the same phenomenon. The preparation for the movement of the table, the special kind of reaction that takes place at this interval of waiting, put the nervous system into a particular condition in which certain muscular movements may take place in an unconscious manner.

But, evidently, this theory is not sufficient to account for movements without contact, nor those that take place in such a way that muscular action could not produce them. It is therefore these two classes of movements which must serve as the basis of new experiments and as the foundation of a new theory.

How also explain the very peculiar and truly inconceivable character of the movements of the table? — this starting to move, so insensible, so gentle, so different from the abruptness characteristic of the impetus given by mechan-

* In the case of difficult tests, when they took place on cold days, a warm spread was stretched over the table, and removed at the moment of the experiment. The operators themselves, before acting, held their hands open for a moment before a stove.

ical force; these levitations so spontaneous, so energetic, which leap up to meet the hands; these dances and imitations of music which you would in vain attempt to equal by means of the combined and voluntary action of the operators; these little raps succeeding the loud ones, when the command is given, the exquisite delicacy of which nothing can express. Several times when someone asked a so-called spirit his age, one of the legs of the centre-table lifted up and rapped 1, 2, 3, etc. Then the movement was accelerated. Finally, the three legs beat a kind of drum-roll so rapid that it was impossible to count, and which the most skilful could never succeed in imitating. On another occasion, under the contact of hands, the table was turning upon three legs, upon two, upon a single one; and, in this last position, changed feet, throwing its weight first upon one and then upon another with great ease, and with nothing abrupt or jerky in its motions. Neither the experimenters nor their most eminent opponents would ever be able to imitate mechanically this dance of the table, and, above all, the whirling pirouettes and changes of feet.

Electricity.— Many have tried to explain the movements of tables by electricity. Even supposing that they involve the very abundant production of this agent, no known effect of electricity would account for the movement of the tables. But, in fact, it is easy to show that there is no electricity produced; for, when a galvanometer was interposed in the chain, no deviation of the needle took place. The electrometer remains as indifferent to the solicitations of the tables as does the mariner's compass.

Nervo-magnetism.— There is certainly some analogy between several phenomena of nervo-magnetism and those of the tables. Those passes which seem to favor balancing without contact; the motion imparted by the chain to this man whom they cause to turn about (unless, indeed, there is in this some effect of the imagination); finally, the power that many mesmerizers exert over the tables — all this seems to indicate a kinship between the two orders of phenomena. But, since the laws of nervo-magnetism are little known, there is no conclusion to be drawn from this, and it seems to me preferable, for the present, to study sepa-

rately the phenomena of tables, which are better adapted to the experiments of the physicist, and which, well studied, will render more service to nervo-magnetism than it could receive in a long time from this obscure branch of physiology.

Thury next touches upon M. de Gasparin's theory of fluidic action. Being certain that he accurately understands this theory, he gives a résumé of it in the following items:

1. A fluid is produced by the brain, and flows along the nerves.
2. This fluid can go beyond the limits of the body; it can be *emitted*.
3. Under the influence of the will, it can move hither and thither.
4. This fluid acts upon inert bodies; yet it shuns contact with certain substances, such as glass.
5. It lifts the parts toward which it moves, or in which it accumulates.
6. It further acts upon inert bodies by attraction or by repulsion, with a tendency to either join or separate the inert body and the organism.
7. It can also determine interior movements in matter, and give rise to noises.
8. This fluid is especially produced and developed by turning, and by the will, and by the joining of hands in a certain manner.
9. It is communicated from one person to another by vicinage or by contact. Yet certain persons impede its communication.
10. We have no knowledge of special movements of the fluid, which are determined by the will.
11. This fluid is probably identical with the nervous fluid and with the nervo-magnetic fluid.

Application.— Rotation is a resultant of the action of the fluid and of the resistances of the wood.

Tipping results from the accumulation of the fluid in the leg of the table which is lifted.

The glass placed in the middle of the table stops the movement because it drives away the fluid.

The glass placed on one side of the table makes the opposite side rise because the fluid, fleeing from the glass, accumulates there.

Thury does not attempt the discussion of this theory. But we may repeat with Gasparin, "When you shall have explained to me how I lift my hand, I will explain to you how I cause the leg of the table to rise."

The whole problem lies in that,— the action of mind on matter. We must not dream that we can give a final solution of it at the present time. To reduce the new facts to conformity with the old ones; that is to say, to relate the action of mind upon inert bodies outside of us to the action of mind upon the matter in our bodies — such is the only problem which the science of to-day can reasonably propose to itself. Thury states it in general terms as follows:

General Question of the Action of Mind upon Matter.— We shall seek to formulate the results of experiment up to the point where experiment abandons us. From there on we shall study all the alternatives offered to our mind, as simple possibilities, some of which will give place to hypotheses explanatory of the new phenomena.

First principle: In the ordinary state of the body, the will acts directly only in the sphere of the organism.— Matter belonging to the external world is modified *on contact with the organism,* and the modifications which it undergoes gradually produce others by contiguity. It is thus that we can act upon objects at a distance from us. Our action at a distance upon all that surrounds us is *mediate* and not immediate. We believe that this is true of the action of all physical forces, such as gravity, heat, electricity. Their effect is gradually communicated, and thus alone they put distance behind them and come into relation with man as a sentient being.

Second principle: In the organism itself there is a series of mediate acts.— Thus the will does not act directly

upon the bones which receive the movement of the muscles; nor does the will modify any more directly the muscles, since, when deprived of nerves, they are incapable of movement. Does the will act directly upon the nerves? It is a mooted question whether it modifies them directly or indirectly. Thus the substance upon which the soul immediately acts is still undetermined. The substance may be solid, may be fluid; it may be a substance still unknown, or perhaps a particular state of known substances. In order to avoid a circumlocution, let me give it a name. I shall call it the *psychode* (ψυχή, soul, and ὁδός, way).

Third principle: The substance upon which the mind immediately acts — the psychode — is only susceptible of very simple modifications under the influence of the mind, for, since the movements are to be somewhat varied, an extensive and complicated apparatus appears in the organism,— a whole system of muscles, vessels, nerves, etc., which are wanting in the inferior animals (among whom movements are very simple), and which would have been unnecessary had matter been directly susceptible of modifications equally varied under the influence of mind. When movements are intended to be very simple (as in the case of infusoria) the complicated apparatus is wanting and the life-spirit acts upon matter that is almost homogeneous.

The following four hypotheses regarding the psychode may be formed:

a. The psychode is a substance peculiar to the organism, and not capable of emerging from it. It acts only mediately upon everything outside of the visible organism.

b. The psychode is a substance peculiar to the organism, capable of extending beyond the limits of the visible organism under certain special conditions. The modifications it receives necessarily act upon other inert bodies. The will acts upon the psychode, and thus mediately, upon the bodies that the sphere of this substance embraces.

c. The psychode is a universal substance which is conditioned in its action on other inert bodies by the structure of living organisms, or by a certain state of inorganic bodies — a state determined by the influence of living organisms in certain special conditions.

d. The psychode is a peculiar state of matter, a state habitually produced within the sphere of the organism, but which may also be produced beyond its limits under the influence of a certain state of the organism,— an influence comparable to that of magnets in the phenomena of diamagnetism.

Thury proposes the adjective *ecteneic* (from ἐκτένεια, extension) to describe that special state of the organism in which the mind can, in some measure, extend the habitual limits of its action, and he styles "ecteneic force" that which is developed in this state.

The first hypothesis (he adds) would not be at all adapted to explain the phenomena with which we are concerned. But the three others give rise to three different explanations, in which (he assures us) the greater part of the phenomena investigated will be comprised.

Explanations based upon the Intervention of Spirits.— M. de Gasparin has shown the error of all these explanations:

1. By theological considerations.
2. By the very just remark that we should not resort to explanations which introduce spirits into the problem until other interpretations have been proved to be entirely insufficient.
3. Finally, by physical considerations.

Looking at the question here solely from the general physical point of view, I do not follow M. de Gasparin (says Thury) in his exploitation of theological explanations. As to the second, I will only call attention to the suggestion that the sufficiency of explanations purely physical should strictly apply only to the Valleyres experiments, where, in truth, nothing gives evidence of the intervention of wills other than the human will.

The question of the intervention of spirits might be decided from the tenor or content of the revelations, in any case in which this content would be such as evidently could

not have originated in the human mind. It is not my intention to discuss this point. The present study takes cognizance solely of movements of inert bodies, and we have only to consider, among the arguments of M. de Gasparin, those which are included in this field of view.

Now, his arguments on this point seem to me to be all summed up in these slightly ironical lines: "Strange spirits! . . . whose presence or absence could depend upon a rotation, depend upon cold or warmth, or health or disease, on high spirits or lassitude, on an unskilful company of unconscious magicians! I have the headache or the grip, therefore the daemonic beings will not be able to appear to-day."

M. de Mirville, who believes in spirits who manifest themselves through the agency of the fluid, might reply to Gasparin that the conditions of the ostensible manifestation of spirits are perhaps the fluidic state itself; that if this is so, we might very well, in a séance phenomenon, have a fluidic manifestation without the intervention of spirits, but not the intervention of spirits without a preliminary fluidic manifestation, and that, thus, anyone will invite such manifestation only at his own risk and peril.

Thury next discusses how the question of spirits ought to be considered.

The task of science (he writes) is to bear witness to the truth. It cannot do so if it borrows a part of its data from revelation or from tradition; to do this would be a begging of the question, and the testimony of science would become worthless.

The facts of the natural order are connected with two categories of forces, the one that of *necessity,* the other that of *freedom.* To the first belong the general forces of gravitation, heat, light, electricity, and the vegetative force. It is possible that we may discover others some day; but at present they are the only ones we know. To the second category belong solely the mind of animals and that of man. These are truly *forces,* since they are the cause of *movements* and of various phenomena in the physical world.

Experience instructs us that these mental forces manifest themselves by the intermediary of special organisms, very complex in the case of man and the superior animals, but simple in that of the lowest, among which latter class mind has no need of muscles and nerves in order to manifest itself externally, but seems to act directly upon a homogeneous matter, the movements of which it determines (the amœba of Ehrenberg). It is in these elementary organizations that the problem of the action of mind on matter is stated, after a fashion, in its simplest terms.

When once we have admitted the existence of the will as distinct, at least in principle, from the material body, it becomes solely a question of experience to ascertain whether other wills than that of man and the animals play any rôle whatever, frequent or occasional, on the stage of life. If these wills exist, they will have some means or other of manifestation, with which *experience alone* can make us acquainted. As a matter of fact, all that it is possible to affirm, *a priori,* is that, in order to appear, they *must* manifest themselves through some one of the forms of the eternal substance we call matter. But, to say that this matter must necessarily have an organization of muscles, nerves, etc., would be to hold to a very narrow idea, and one already belied by observation of the animal kingdom in its lower types. As long as we do not know what the bond is that unites the mind to the matter in which it manifests itself, it would be perfectly illogical to lay down, *a priori,* particular conditions which matter must observe in this manifestation. These conditions are at present wholly undetermined. Thus we are at liberty to seek for signs of these manifestations in the cosmic ether or in ponderable matter; in the gases, the liquids, or the solids; in unorganized matter, or particularly in matter already organized, such as that of which man and the animals are built up. It would be poor logic to affirm that other wills than those of men and animals cannot be discovered, on the ground that, heretofore, nothing of the kind has been seen; for facts of this kind may have been observed, but not scientifically elucidated and authenticated. Furthermore these wills might appear only at long intervals, or what seem

long to us; but the vast abysses of nature's epochs are not to be spanned by our little memories or measured by the momentary duration of our lives.

Such are the facts and the ideas set forth in this conscientious monograph of Professor Thury. It is easily seen that, in his opinion (1) the phenomena are positive facts; (2) that they are produced by an unknown substance, to which he gives the name *psychode,* a something that, by the hypothesis, exists in us and serves as the intermediary between the mind and the body, between the will and the organs, and can project itself beyond the limits of the body; (3) that the hypothesis of spirits is not absurd, and that there may exist in this world other wills than those of man and the animals, wills capable of acting on matter.

Professor Marc Thury died in 1905, having devoted his entire life to the study of the exact sciences. His specialty was astronomy.

CHAPTER VIII

THE EXPERIMENTS OF THE DIALECTICAL SOCIETY OF LONDON

A well-known association of scholars and scientists, the Dialectical Society of London, founded in 1867 under the presidency of Sir John Lubbock, resolved, in the year 1869, to include within the sphere of its observations, the physical phenomena which it is the object of this volume to study. After a series of experiments the society published a report, to which it added the attestations, upon the same subject, of a certain number of scientists, among whom I had the honor of being included.* This report was translated into French by Dr. Dusart and published † in the series of psychic works so happily planned and directed by Count de Rochas. To give a true idea here of the results reached by this society I cannot do better than cite the salient and essential portions of this purely scientific memoir.

Two or three paragraphs from the beginning of the report will show how and at what time the society first took up psycho-physical studies:

At a Meeting of the London Dialectical Society, held on Wednesday, the 6th of January, 1869, Mr. J. H. Levy in the chair, it was resolved: —

"That the Council be requested to appoint a Committee in conformity with Bye-law VII., to investigate the Phenomena alleged to be Spiritual Manifestations, and to report thereon."

* Report on Spiritualism of the Committee of the London Dialectical Society, London: 1871.

† In one vol. 8vo. Paris: Leymarie, 1900.

This committee was formed on January 26 following. It was composed of twenty-seven members. Among these we note Alfred Russel Wallace, the learned naturalist and member of the Royal Society, of London. Professor Huxley and George Henry Lewis were asked to collaborate with the committee. They refused. Professor Huxley's letter is too characteristic to be omitted:

Sir,— I regret that I am unable to accept the invitation of the Council of the Dialectical Society to co-operate with a Committee for the investigation of "Spiritualism;" and for two reasons. In the first place, I have no time for such an inquiry, which would involve much trouble and (unless it were unlike all inquiries of that kind I have known) much annoyance. In the second place, I take no interest in the subject. The only case of "Spiritualism" I have had the opportunity of examining into for myself, was as gross an imposture as ever came under my notice. But supposing the phenomena to be genuine — they do not interest me. If any body would endow me with the faculty of listening to the chatter of old women and curates in the nearest cathedral town, I should decline the privilege, having better things to do.

And if the folk in the spiritual world do not talk more wisely and sensibly than their friends report them to do, I put them in the same category.

The only good that I can see in a demonstration of the truth of "Spiritualism" is to furnish an additional argument against suicide. Better live a crossing-sweeper than die and be made to talk twaddle by a "medium" hired at a guinea a séance.

I am, sir, etc.,

29th January, 1869. T. H. Huxley.

As if opposing a direct negative and rebuke to this radical scepticism, based on a single séance of observation (!) the learned electrician, Cromwell Fleetwood Varley, in 1867, who did so much to forward and encourage the laying of

the third (and finally successful) Atlantic cable between Europe and America, hastened to identify himself with the investigations, and by his aid materially furthered the progress of this scientific examination.

The report, with its various pieces of testimony, was presented to the Dialectical Society on the 20th of July, 1870. But, in order not to compromise the society, it was decided not to publish it officially, under the ægis of the association. Consequently the committee unanimously resolved to publish the report on its own responsibility. It reads as follows:

Your Committee have held fifteen meetings, at which they received evidence from thirty-three persons, who described phenomena which, they stated, had occurred within their own personal experience.

Your Committee have received written statements relating to the phenomena from thirty-one persons.

Your Committee invited the attendance and requested the co-operation and advice of scientific men who had publicly expressed opinions, favourable or adverse, to the genuineness of the phenomena.

Your Committee also specially invited the attendance of persons who had publicly ascribed the phenomena to imposture or delusion.

As it appeared to your Committee to be of the greatest importance that they should investigate the phenomena in question by personal experiment and test, they resolved themselves into sub-committees as the best means of doing so.

Six Sub-committees were accordingly formed.

These reports, hereto subjoined, substantially corroborate each other, and would appear to establish the following propositions: —

1. That sounds of a varied character, apparently proceeding from articles of furniture, the floor and walls of the room (the vibrations accompanying which sounds are often distinctly perceptible to the touch) occur, without

being produced by muscular action or mechanical contrivance.

2. That movements of heavy bodies take place without mechanical contrivance of any kind or adequate exertion of muscular force by the persons present, and frequently without contact or connection with any person.

3. That these sounds and movements often occur at the times and in the manner asked for by persons present, and, by means of a simple code of signals, answer questions and spell out coherent communications.

4. That the answers and communications thus obtained are, for the most part, of a commonplace character; but facts are sometimes correctly given which are only known to one of the persons present.

5. That the circumstances under which the phenomena occur are variable, the most prominent fact being that the presence of certain persons seem necessary to their occurrence, and that of others generally adverse. But this difference does not appear to depend upon any belief or disbelief concerning the phenomena.

6. That, nevertheless, the occurrence of the phenomena is not insured by the presence or absence of such persons respectively.

The oral and written evidence received by your Committee not only testifies to phenomena of the same nature as those witnessed by the sub-committees, but to others of a more varied and extraordinary character.

This evidence may be briefly summarized as follows: —

1. Thirteen witnesses state that they have seen heavy bodies — in some instances men — rise slowly in the air and remain there for some time without visible or tangible support.

2. Fourteen witnesses testify to having seen hands or figures, not appertaining to any human being, but life-like in appearance and mobility, which they have sometimes touched or even grasped, and which they are therefore convinced were not the result of imposture or illusion.

3. Five witnesses state that they have been touched, by some invisible agency, on various parts of the body, and

often where requested, when the hands of all present were visible.

4. Thirteen witnesses declare that they have heard musical pieces well played upon instruments not manipulated by any ascertainable agency.

5. Five witnesses state that they have seen red-hot coals applied to the hands or heads of several persons without producing pain or scorching; and three witnesses state that they have had the same experiment made upon themselves with the like immunity.

6. Eight witnesses state that they have received precise information through rappings, writings, and in other ways, the accuracy of which was unknown at the time to themselves or to any persons present, and which, on subsequent inquiry, was found to be correct.

7. One witness declares that he has received a precise and detailed statement which, nevertheless, proved to be entirely erroneous.

8. Three witnesses state that they have been present when drawings, both in pencil and colors, were produced in so short a time, and under such conditions, as to render human agency impossible.

9. Six witnesses declare that they have received information of future events, and that in some cases the hour and minute of their occurrence have been accurately foretold, days and even weeks before.

In addition to the above, evidence has been given of trance-speaking, of healing, of automatic writing, of the introduction of flowers and fruits into closed rooms, of voices in the air, of visions in crystals and glasses, and of the elongation of the human body.

Some extracts from the reports will give my readers a better idea of these experiments and show their wholly scientific character:

All of these meetings were held at the private residences of members of the Committee, purposely to preclude the possiblity of prearranged mechanism or contrivance.

The furniture of the room in which the experiments were conducted was on every occasion its accustomed furniture.

The tables were in all cases heavy dining-tables, requiring a strong effort to move them. The smallest of them was 5ft. 9in. long by 4ft. wide, and the largest, 9ft. 3in. long and 4½ft. wide, and of proportionate weight.

The room, tables, and furniture generally were repeatedly subjected to careful examination before, during, and after the experiments, to ascertain that no concealed machinery, instrument or other contrivances existed by means of which the sounds or movements hereinafter mentioned could be caused.

The experiments were conducted in the light of gas, except on the few occasions specially noted in the minutes.

Your Committee have avoided the employment of professional or paid mediums, the mediumship being that of members of your Sub-committee, persons of good social position and of unimpeachable integrity, having no pecuniary object to serve, and nothing to gain by deception.

Of the members of your Sub-committee about *four-fifths* entered upon the investigation wholly sceptical as to the reality of the alleged phenomena, firmly believing them to be the result either of *imposture* or of *delusion,* or of *involuntary muscular action.* It was only by irresistible evidence, under conditions that precluded the possibility of either of these solutions, and after trial and test many times repeated, that the most sceptical of your Sub-committee were slowly and reluctantly convinced that the phenomena exhibited in the course of their protracted inquiry were veritable facts.

A description of one experiment, and the manner of conducting it, will best show the care and caution with which your Committee have pursued their investigations.

So long as there was contact, or even the possibility of contact, by the hands or feet, or even by the clothes of any person in the room, with the substance moved or sounded, there could be no perfect assurance that the motions and sounds were not produced by the person so in contact. The following experiment was therefore tried:

On an occasion when eleven members of your Sub-com-

mittee had been sitting round one of the dining-tables above described for forty minutes, and various motions and sounds had occurred, they, by way of test, turned the backs of their chairs to the table, at about nine inches from it. They all then knelt upon their chairs, placing their arms upon the backs thereof. In this position, their feet were of course turned away from the table, and by no possibility could be placed under it or touch the floor. The hands of each person were extended over the table at about four inches from the surface. Contact, therefore, with any part of the table could not take place without detection.

In less than a minute the table, untouched, moved *four* times; at first about *five* inches to one side, then about *twelve* inches to the opposite side, and then, in like manner, four inches and six inches respectively.

The hands of all present were next placed on the backs of their chairs, and about a foot from the table, which again moved, as before, *five* times, over spaces varying from four to six inches. Then all the chairs were removed twelve inches from the table, and each person knelt on his chair as before, this time however folding his hands behind his back, his body being thus about eighteen inches from the table, and having the back of the chair between himself and the table. The table again moved four times, in various directions. In the course of this conclusive experiment, and in less than half-an-hour, the table thus moved, without contact or possibility of contact with any person present, thirteen times, the movements being in different directions, and some of them according to the request of various members of your Sub-committee.

The table was then carefully examined, turned upside down and taken to pieces, but nothing was discovered to account for the phenomena. The experiment was conducted throughout in the full light of gas above the table.

Altogether, your Sub-committee have witnessed upwards of *fifty* similar motions without contact on *eight* different evenings, in the houses of members of your Sub-committee, the most careful tests being applied on each occasion.

In all similar experiments the possibility of mechanical or other contrivance was further negatived by the fact that

the movements were in various directions, now to one side, then to the other; now up the room, now down the room — motions that would have required the co-operation of many hands or feet; and these, from the great size and weight of the tables, could not have been so used without the visible exercise of muscular force. Every hand and foot was plainly to be seen and could not have been moved without instant detection.

The motions were witnessed simultaneously by all present. They were matters of measurement, and not of opinion or fancy. And they occurred so often, under so many and such various conditions, with such safeguards against error or deception, and with such invariable results, as to satisfy the members of your Sub-committee by whom the experiments were tried, wholly sceptical as most of them were when they entered upon the investigation, that *there is a force capable of moving heavy bodies without material contact, and which force is in some unknown manner dependent upon the presence of human beings.*

Such was the first verdict of science upon Spiritualistic doings in England, a verdict rendered by physicists, chemists, astronomers and naturalists, several of them members of the London Royal Society. The investigations were under the especial care of Professor Morgan, president of the Mathematical Society, of London; of Varley, chief electrical engineer of the department of telegraphs, and Alfred Wallace, naturalist, etc. Several members of the Dialectical Society refused to join in the conclusions of the committee, and declared they ought to be verified by another scientist; for example, by the chemist, Crookes. This gentleman accepted the proposition, and in this way it was that he began his experiments, of which more anon.

But, before presenting an account of the experiments of the eminent chemist, I should like to place before my readers the chief points settled by the Experimental Committee, of which I have just spoken.

SPECIAL OBSERVATIONS.

March 9th. Nine members present. Reunion at eight o'clock. The following phenomena were produced: 1. The members of the circle standing, rested the tips of their fingers only on the table. It made a considerable movement. 2. Holding their hands a few inches above the table, and no one in any way touching it, it moved a distance of more than a foot. 3. To render the experiment absolutely conclusive, all present stood clear away from the table, and stretching out their hands over it without touching it, it again moved as before, and about the same distance. During this time, one of the Committee was placed upon the floor to look carefully beneath the table, while others were placed outside to see that no person went near to the table. In this position it was frequently moved, without possibility of contact by any person present. 4. Whilst thus standing clear of the table, but with the tips of their fingers resting upon it, all at the same moment raised their hands at a given signal; and on several occasions the table jumped from the floor to an elevation varying from half an inch to an inch. 5. All held their hands close above the table, but not touching it, and then on a word of command raised them suddenly, and the table jumped as before. The member lying on the floor, and those placed outside the circle, were keenly watching as before, and all observed the phenomena as described.

April 15th. Eight members present. Sitting at 8 p. m. Within five minutes tapping sounds were heard on the leaf of the table. Various questions, as to order of sitting, etc., were put, and answered by rappings. The alphabet was called for, and the word "laugh" was spelled out. It was asked if it was intended that we should laugh. An affirmative answer being given, the members laughed; upon which the table made a most vigorous sound and motion imitative of and responsive to the laughter, and so ludicrous as to cause a general peal of real laughter, to which the table shook, and the rapping kept time as an accompaniment. The following questions were then put and answered by

the number of raps given: — How many children has Mrs. M—— ?" "Four;" "Mrs. W—— ?" Three;" "Mrs. D—— ?" No rap; "Mrs. E—— ?" "Five;" "Mrs. S—— ?" "Two." It was ascertained, upon inquiry that these replies were perfectly correct, except in the case of Mrs. E——, who has only four children living, but has lost one. Neither the medium nor any person present, was aware of all the above numbers, but each number was known to some of them. The inquiry for a written communication being responded to by three raps, some sheets of paper with a pencil were laid under the table, and at the end of the sitting examined, but no letter or mark was found on the paper. In order to test whether these sounds would continue under different conditions, all sat some distance from the table, holding hands in a circle round it. But instead of upon the table as before, loud rappings were heard to proceed from various parts of the floor, and from the chair on which the medium sat; while some came from the other side of the room, a distance of about fifteen feet from the nearest person. A desire having been expressed for a shower of raps, loud rapping came from every part of the table at once, producing an effect similar to that of a shower of hail falling upon it. The sounds throughout the evening were very sharp and distinct. It was observed that, although during the conversation the rappings are sometimes of a singularly lively character, yet when a question is put they cease instantly, and not one is heard until the response is given.

April 29th. Nine members present. Medium and conditions as before. In about a quarter of an hour the table made sundry movements along the floor, with rappings. The sounds at first were very softly given, but subsequently became much stronger. They beat time to the airs played by a musical box, and came from any part of the table requested by the members. Some questions were put and followed by raps, but more frequently by tilting of the table at its sides, ends, or corners, the elevation being from one to four inches. An endeavour was made by those sitting near, to prevent the table from rising, but it resisted

all their efforts. The chair on which the medium was seated was drawn several times over the floor. First it moved backward several feet; then it gave several twists and turns, and finally returned with the medium to nearly its original position. The chair had no casters, and moved quite noiselessly, the medium appearing perfectly still and holding her feet above the carpet; so that during the entire phenomenon no part of her person or of her dress touched the floor. There was bright gaslight, and the members had a clear opportunity to observe all that occurred; and all agreed that imposture was impossible. While this was going on, a rapping sound came continually from the floor beneath and around the chair. It was then suggested that trials should be made if the table would move without contact. All present, including the medium stood quite clear of the table, holding their hands from three to six inches above it, and without any way of touching it. Observers were placed under it to see that it was not touched there. The following were the observations:

1. The table repeatedly moved along the floor in different directions, often taking that requested. Thus, in accordance with a desire expressed that it should move from the front to the back room, it took that direction, and, on approaching the folding doors and meeting with an obstruction, turned as if to avoid it.

2. On a given signal all raised their hands suddenly, and the table immediately sprang or jerked up from the floor about one inch.

Various members of the Committee volunteered by turns to keep watch below the table, whilst others standing round them carefully noted everything that took place; but no one could discover any visible agency in their production.

May 18*th*. Music was played on the piano-forte, and one piece was accompanied by tapping sounds from all parts of the table, and another piece both by tapping sounds, vibrations, and slight vertical movements of the table at its sides, ends, and corners. The sounds and movements all kept time with the music. The same phenomena also occurred when a song was sung. During the *séance* the

sounds were very equally distributed, being seldom confined to one part of the table.

June 9th. Eight members present. The most interesting fact this evening was, that though the tapping sounds proceeded from different parts of the table, but principally from that in front of the medium; yet, when she went into the hall to receive a message, they still continued to come from that part of the table.

The alphabet being repeated in accordance with the signal, "Queer Pals" was spelt out. These words seemed to amuse and puzzle the meeting. However, it was suggested they might apply to the Christy Minstrels, whose nigger melodies, at St. George's Hall, were very clearly heard through the open window of the back room. At this suggestion the table gave three considerable tilts.

June 17th. The medium held a sheet of note paper at arm's length over the table by one of its corners, and, at request, faint but distinct taps were heard upon it. The other corners of the paper were then held by members of the Committee, and the sounds were again heard by all at the table; while those who held the paper felt the impact of the invisible blows. One or more questions were answered in this way by three clear and distinctly audible taps, which had a sound similar in character to that produced by dropping water. This new and curious phenomenon occurred close under the eyes of all present, without any physical cause for it being detected.

June 21st. Movement of harmonican without contact. On the medium and two other members holding their hands above the harmonican without in any way touching it, it moved almost entirely round, by successive jerks, on the table on which it was placed. The dining-table was strongly moved a distance of six feet, the hands of the members present resting lightly on it.

Oct. 18th. A cylinder of canvas, three feet in height, and about two feet in diameter, was placed under a small

table, the legs of which were contained within it. Inside the cylinder was a bell, resting on the floor. No sounds proceeded from the bell, but there were repeated rappings upon and jerkings of the table. This cylinder precluded the possibility of contact with the table by a foot of any of the persons present, during the entire continuance of the knockings and jerkings of the table.

Dec. 14*th. Sounds from table without contact.*— All sat away from the table, without in any manner touching it, and the sounds, although somewhat fainter, continued to proceed from it.

Dec. 28*th. Movements without contact.*— Question: "Would the table now be moved without contact?" Answer: "Yes," by three raps on the table.

All chairs were then turned with their backs to the table, and nine inches away from it; and all present *knelt* on the chairs, with their wrists resting on the backs, and their hands a few inches above the table.

Under these conditions, the table (the heavy dining-room table previously described) moved four times, each time from four to six inches, and the second time nearly twelve inches.

Then all hands were placed on the backs of the chairs, and nearly a foot from the table, when four movements occurred, one slow and continuous, for nearly a minute. Then all present placed their hands behind their backs, kneeling erect on their chairs, which were removed a foot clear away from the table; the gas also was turned up higher, so as to give abundance of light, and under these test conditions, distinct movements occurred, to the extent of several inches each time, and visible to every one present.

The motions were in various directions, towards all parts of the room — some were abrupt, others steady. At the same time, and under the same conditions, distinct raps occurred, apparently both on the floor and on the table, in answer to requests for them. The above described movements were so unmistakable, that all present unhesitatingly declared their conviction, that no physical force, exerted

by any one present, could possibly have produced them. And they declared, further, in writing, that a rigid examination of the table, showed it to be an ordinary dining-table, with no machinery or apparatus of any kind connected with it. The table was laid on the floor with its legs up, and taken to pieces as far as practicable.

Special Observations.

These experiments are only a repetition and absolute confirmation of those that have been described all through this volume, from its very first pages. Yet they are enough in themselves alone to justify one's convictions.

This first sub-committee, the principal experiments of which we have been giving, was studying only physical phenomena. Sub-committee No. 2 was more especially occupied with intelligent communications and mediumistic dictations. They need not detain us here, but will find their place in a special work on Spiritualism.

The same committee published in its general report the following letter, which it did me the honor of requesting:

I must confess to you, in the first place, gentlemen, that, of those who call themselves "mediums" and "spiritists," a considerable number are persons of limited intelligence, incapable of bringing the experimental method to bear on the investigation of this order of phenomena, and consequently are often the dupes of their credulity or ignorance; while others, of whom the number is also considerable, are impostors whose moral sense has become so blunted by the habit of fraud that they seem to be incapable of appreciating the heinousness of their criminal abuse of the confidence of those who apply to them for instruction or for consolation.

And even where the subject is being investigated seriously and in good faith, the force to which the production of these phenomena is due is so capricious in its action that much delay and disappointment is inevitable in the prose-

cution of any experimental inquiry in regard to them. It is, therefore, no easy matter to put aside the obstacles thus placed in the way of the serious inquirer, to eliminate these sources of error, and to get at genuine manifestations of the phenomena in question; carefully guarding one's own mind against all error, all self-deception in the methodical and scrupulous examination of the order of facts now under discussion. Nevertheless, I do not hesitate to affirm my conviction, based on personal examination of the subject, that any scientific man who declares the phenomena denominated "magnetic" "somnambulistic," "mediumistic," and others not yet explained by science, to be "impossible," is one *who speaks without knowing what he is talking about;* and also any man accustomed, by his professional avocations, to scientific observation — provided that his mind be not biased by preconceived opinions, nor his mental vision blinded by that opposite kind of illusion, unhappily too common in the learned world, which consists in imagining that the laws of Nature are already known to us, and that everything which appears to overstep the limit of our present formulas is impossible — may acquire a radical and absolute certainty of the reality of the facts alluded to.

After an affirmation so categorical, it is hardly necessary for me to assure the members of the Dialectical Society that I have acquired, through my own observation, the absolute certainty of the reality of these phenomena. . . .

But although thus compelled, in the absence of conclusive data in regard to *the cause* of the so-called "Spiritual Phenomena," to refrain from making any positive affirmation in regard to this part of the subject, I may add that while the general assertion of its spiritual nature, on the part of the occult force which, within the last quarter of a century, has thus manifested itself all over the globe, constitutes a feature of the case which, from its universality, merits the attention of the impartial investigator — the history of the human race, from the earliest ages, furnishes instances of coincidences, previsions and presentiments of warnings experienced in certain critical moments, of apparitions more or less distinctly seen, which are stated, on

evidence as trustworthy as that which we possess with regard to any other branch of historical tradition, to have occurred, spontaneously, in the experience of all nations, and which may therefore be held to strengthen the presumption of the possibility of communication between incarnate and discarnate spirits.

I may also add that my own investigations in the fields of philosophy and of modern astronomy have led me, as is well known, to adopt a personal and individual way of regarding the subject of space and time, the plurality of inhabited worlds, the eternity and ubiquity of the acting forces of the universe, and the indestructibility of souls, as well as of atoms.

The everlastingness of intelligent life ought to be regarded as the result of the harmonious succession of sidereal incarnations.

Our earth being one of the heavenly bodies, a province of planetary existence, and our present life being a phase of our eternal duration, it appears only natural (the *super*-natural does not exist) that there should exist a permanent link between the spheres, the bodies, and the souls of the universe, and therefore altogether probable that the existence of this link will be demonstrated, in course of time, by the advance of scientific discovery.

It would be difficult to over-rate the importance of the questions thus brought forward for consideration; and I have seen with lively satisfaction the noble initiative which, through the formation of your Committee of Inquiry, has been taken by a body of men so justly eminent as the members of the Dialectical Society, in the experimental investigation of these deeply interesting phenomena. I am most happy, therefore, to comply with the tenor of your letter, by sending you the humble tribute of my observations on the subject in question, and thus to have the opportunity of offering to your society the expression of my sincerest good wishes for the speedy elucidation of the mysteries of nature that have not yet been brought within the domain of positive science.

I am, sir, yours faithfully,

CAMILLE FLAMMARION,
10, Rue des Moineaux (Palais Royal).

Paris, May 8, 1870.

The foregoing résumé of the labors of the Dialectical Society of London shows once more that mediumistic phenomena long ago entered upon the road of scientific experiment. It would seem as if only the wilfully blind could henceforth deny their allegiance.

The results of the studies described also form an answer to the question frequently asked, whether one can undertake similar experiments without knowing a true medium. I reply that, in any meeting of a dozen persons, there will always be one or more mediums. This was proved by the séances of the Count de Gasparin.

The English report also contains (May 25, 1869) a communication from the electrician, Cromwell Varley, declaring that mediumistic phenomena could not be discredited by any observer of good faith, and that, to him, the hypothesis of disembodied spirits is the one that best explains them — just plain, common spirits (as a general thing), like the majority of the citizens of our planet.

The scientific experiments of the Dialectical Society's committee were continued by the "Society for Psychical Research," founded in 1882, the successive presidents of which were Professor Sidgwick, Professor Balfour Stewart, Professor Sidgwick for a second time, Professor William James, Sir William Crookes, Frederick Myers, Sir Oliver Lodge, Professor Richet — all eminent in the departments of science and education. Let me mention here the splendid work of Dr. Hodgson and of Professor Hyslop in the American branch of this society.

The experiments were continued, in a masterly way, by the celebrated chemist, Sir William Crookes, and yielded him the most wondrous results. My readers will presently realize this.

CHAPTER IX

THE EXPERIMENTS OF SIR WILLIAM CROOKES

The learned chemist, Sir William Crookes, member of the Royal Society of London, the author of several discoveries of the first rank (among which should be placed the discovery, in 1861, of the metal, thallium), and of ingenious experiments on "radiant matter," published his first researches on the subject we are here considering in a review of which he was the editor — the *Quarterly Journal of Science.*

I had the honor of contributing certain astronomical papers to this journal.* I will first lay before my readers an extract from Mr. Crookes's article of the 1st of July, 1871, entitled "Experimental Investigation of a New Force," in which he describes his studies with Home. I also had occasion myself more than once to hold conversation with this medium.†

Twelve months ago in this journal, July 1, 1870, I wrote an article, in which, after expressing in the most emphatic manner my belief in the occurrence, under certain circumstances, of phenomena inexplicable by any known natural laws, I indicated several tests which men of science had a right to demand before giving credence to the genuineness of these phenomena. Among the tests pointed out were, that a "delicately poised balance should be moved under test conditions;" and that some exhibition of power equivalent to so many "foot-pounds" should be "manifested in

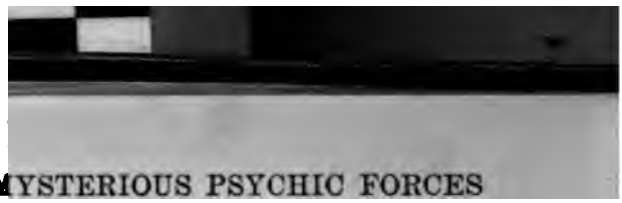
* See, for example, the January number, 1876: *Sidereal Astronomy.*
† Especially at Nice, in 1881 and 1884. Home died in 1886. He was born in 1833, near Edinburgh.

his laboratory, where the experimentalists could weigh, measure, and submit it to proper tests." I said, too, that I could not promise to enter fully into this subject, owing to the difficulties of obtaining opportunities, and the numerous failures attending the enquiry; moreover, that "the persons in whose presence these phenomena take place are few in number, and opportunities for experimenting with previously arranged apparatus are rarer still."

Opportunities having since offered for pursuing the investigation, I have gladly availed myself of them for applying to these phenomena careful scientific testing experiments, and I have thus arrived at certain definite results which I think it right should be published. These experiments appear conclusively to establish the existence of a new force, in some unknown manner connected with the human organization, which for convenience may be called the Psychic Force.

Of all the persons endowed with a powerful development of this psychic force, and who have been termed "mediums" upon quite another theory of its origin, Mr. Daniel Dunglas Home is the most remarkable, and it is mainly owing to the many opportunities I have had of carrying on my investigation in his presence that I am enabled to affirm so conclusively the existence of this force. The experiments I have tried have been very numerous, but owing to our imperfect knowledge of the conditions which favor or oppose the manifestations of this force, to the apparently capricious manner in which it is exerted, and to the fact that Mr. Home himself is subject to unaccountable ebbs and flows of the force, it has but seldom happened that a result obtained on one occasion could be subsequently confirmed and tested with apparatus specially contrived for the purpose.

Among the remarkable phenomena which occur under Mr. Home's influence, the most striking, as well as the most easily tested with scientific accuracy, are —(1) the alteration in the weight of bodies, and (2) the playing of tunes upon musical instruments (generally an accordion, for convenience of portability) without direct human intervention, under conditions rendering contact or connection with the keys impossible. Not until I had witnessed these facts some half-



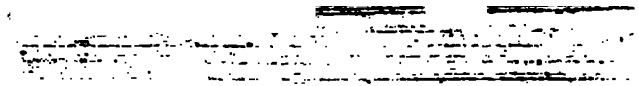
dozen times, and scrutinised them with all the critical acumen I possess, did I become convinced of their objective reality. Still, desiring to place the matter beyond the shadow of doubt, I invited Mr. Home on several occasions to come to my own house, where, in the presence of a few scientific enquirers, these phenomena could be submitted to crucial experiments.

The meetings took place in the evening, in a large room lighted by gas. The apparatus prepared for the purpose of testing the movements of the accordion, consisted of a cage, formed of two wooden hoops, respectively 1 foot 10 inches and 2 feet diameter, connected together by 12 narrow laths, each 1 foot 10 inches long, so as to form a drum-shaped frame, open at the top and bottom; round this 50 yards of insulated copper wire were wound in 24 rounds, each being rather less than an inch from its neighbor. The horizontal strands of wire were then netted together firmly with string, so as to form meshes rather less than 2 inches long by 1 inch high. The height of this cage was such that it would just slip under my dining-table, but be too close to the top to allow of the hand being introduced into the interior, or to admit of a foot being pushed underneath it. In another room were two Grove's cells, wires being led from them into the dining-room for connection, if desirable, with the wire surrounding the cage.

The accordion was a new one, having been purchased by myself for the purpose of these experiments at Wheatstone's, in Conduit Street. Mr. Home had neither handled nor seen the instrument before the commencement of the test experiments.

In another part of the room an apparatus was fitted up for experimenting on the alteration in the weight of a body. It consisted of a mahogany board, 36 inches long by 9½ inches wide and 1 inch thick. At each end a strip of mahogany 1½ inches wide was screwed on, forming feet. One end of the board rested on a firm table, whilst the other end was supported by a spring balance hanging from a substantial tripod stand. The balance was fitted with a self-registering index, in such a manner that it would record the maximum weight indicated by the pointer. The apparatus

PLATE XII. CAGE OF COPPER WIRE, ELECTRICALLY CHARGED, USED BY PROFESSOR CROOKES IN THE HOME ACCORDION EXPERIMENT.



was adjusted so that the mahogany board was horizontal, its foot resting flat on the support. In this position its weight was 3 lbs., as marked by the pointer of the balance.

Before Mr. Home entered the room the apparatus had been arranged in position, and he had not even the object of some parts of it explained before sitting down. It may, perhaps, be worth while to add, for the purpose of anticipating some critical remarks which are likely to be made, that in the afternoon I called for Mr. Home at his apartments, and when there he suggested that, as he had to change his dress, perhaps I should not object to continue our conversation in his bedroom. I am, therefore, enabled to state positively, that no machinery, apparatus, or contrivance of any sort was secreted about his person.

The investigators present on the test occasion were an eminent physicist, high in the ranks of the Royal Society,* a well-known Serjeant-at-Law;† my brother; and my chemical assistant.

Mr. Home sat in a low easy-chair at the side of the table. In front of him under the table was the aforesaid cage, one of his legs being on each side of it. I sat close to him on his left, and another observer sat close to him on his right, the rest of the party being seated at convenient distances round the table.

For the greater part of the evening, particularly when anything of importance was proceeding, the observers on each side of Mr. Home kept their feet respectively on his feet, so as to be able to detect his slightest movement.

The temperature of the room varied from 68 degrees to 70 degrees F.

Mr. Home took the accordion between the thumb and middle finger of one hand at the opposite end to the keys (see Pl. XII A) (to save repetition this will be subsequently called "in the usual manner").

Having previously opened the bass key myself, and the cage being drawn from under the table so as just to allow the accordion to be pushed in with its keys downwards, it

* Sir William Huggins, an astronomer well known for his discoveries in spectrum analysis.

† Edward William Cox.

was pushed back as close as Mr. Home's arm would permit, but without hiding his hand from those next to him (Pl. XII, Cut B). Very soon the accordion was seen by those on each side to be waving about in a somewhat curious manner; then sounds came from it, and finally several notes were played in succession. Whilst this was going on, my assistant went under the table, and reported that the accordion was expanding and contracting; at the same time it was seen that the hand of Mr. Home by which it was held was quite still, his other hand resting on the table.

Presently the accordion was seen by those on either side of Mr. Home to move about, oscillating and going round and round the cage, and playing at the same time. Dr. A. B. now looked under the table, and said that Mr. Home's hand appeared quite still whilst the accordion was moving about emitting distinct sounds.

Mr. Home still holding the accordion in the usual manner in the cage, his feet being held by those next him, and his other hand resting on the table, we heard distinct and separate notes sounded in succession, and then a simple air was played. As such a result could only have been produced by the various keys of the instrument being acted upon in harmonious succession, this was considered by those present to be a crucial experiment.

But the sequel was still more striking, for Mr. Home then removed his hand altogether from the accordion, taking it quite out of the cage, and placed it in the hand of the person next to him. The instrument then continued to play, no person touching it and no hand being near it.

I was now desirous of trying what would be the effect of passing the battery current round the insulated wire of the cage, and my assistant accordingly made the connection with the wires from the two Grove's cells. Mr. Home again held the instrument inside the cage in the same manner as before, when it immediately sounded and moved about vigorously. But whether the electric current passing round the cage assisted the manifestation of force inside, it is impossible to say.

After this experiment, the accordion, which he kept holding in one hand, then commenced to play, at first chords and

runs, and afterwards a well-known sweet and plaintive melody, which was executed perfectly in a very beautiful manner. Whilst this tune was being played I grasped Mr. Home's arm, below the elbow, and gently slid my hand down it until I touched the top of the accordion. He was not moving a muscle. His other hand was on the table, visible to all, and his feet were under the feet of those next to him.

Having met with such striking results in the experiments with the accordion in the cage, we turned to the balance apparatus already described. Mr. Home placed the tips of his fingers lightly on the extreme end of the mahogany board, which was resting on the support, whilst Dr. A. B. and myself sat, one on each side of it, watching for any effect which might be produced. Almost immediately the pointer of the balance was seen to descend. After a few seconds it rose again. This movement was repeated several times, as if by successive waves of the psychic force. The end of the board was observed to oscillate slowly up and down during the experiment.

Mr. Home now of his own accord took a small hand-bell and a little card match-box, which happened to be near, and placed one under each hand, to satisfy us, as he said, that he was not producing the downward pressure (see Fig. 3). The very slow oscillation of the spring balance became more marked, and Dr. A. B., watching the index, said that he saw it descend to 6½ lbs. The normal weight of the board as so suspended being 3 lbs., the additional downward pull was therefore 3½ lbs. On looking immediately afterwards at the automatic register, we saw that the index had at one time descended as low as 9 lbs., showing a maximum pull of 6 lbs. upon a board whose normal weight was 3 lbs.

In order to see whether it was possible to produce much effect on the spring balance by pressure at the place where Mr. Home's fingers had been, I stepped upon the table and stood on one foot at the end of the board. Dr. A. B., who was observing the index of the balance, said that the whole weight of my body (140 lbs.) so applied only sunk the index 1½ lbs., or 2 lbs. when I shook it? Mr. Home had been sitting in a low easy-chair, and could not, therefore, had he tried his utmost, have exerted any material influence

on these results. I need scarcely add that his feet as well as his hands were closely guarded by all in the room.

This experiment appears to me more striking, if possible, than the one with the accordion. As will be seen on referring to the cut (Fig. 3), the board was arranged perfectly horizontally, and it was particularly noticed that Mr. Home's fingers were not at any time advanced more than 1½ inches from the extreme end, as shown by a pencil-mark, which, with Dr. A. B.'s acquiescence, I made at the

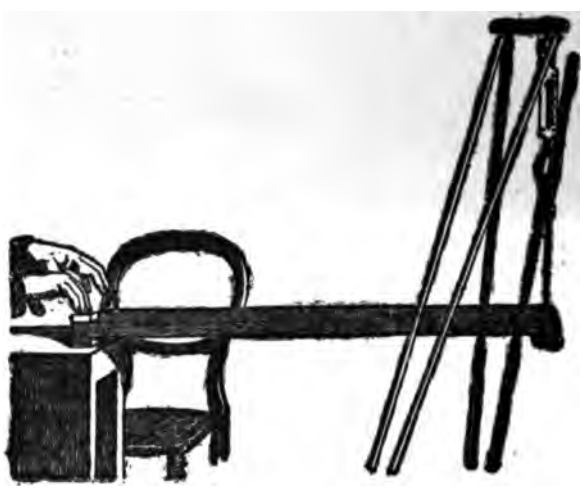


FIG. 3.

time. Now, the wooden foot being also 1½ inches wide, and resting flat on the table, it is evident that no amount of pressure exerted within this space of 1½ inches could produce any action on the balance. Again, it is also evident that when the end farthest from Mr. Home sank, the board would turn on the farther edge of this foot as on a fulcrum.

The arrangement was consequently that of a see-saw, 36 inches in length, the fulcrum being 1½ inches from one end; were he, therefore, to have exerted a downward pressure, it would have been in opposition to the force which was causing the other end of the board to move down.

The slight downward pressure shown by the balance when I stood on the board was owing probably to my foot extending beyond this fulcrum.

I have now given a plain, unvarnished statement of the facts from copious notes written at the time the occurrences were taking place, and copied out in full immediately after.

Respecting the cause of these phenomena, the nature of the force to which, to avoid periphrasis, I have ventured to give the name of *Psychic,* and the correlation existing between that and the other forces of nature, it would be wrong to hazard the most vague hypothesis. Indeed, in inquiries connected so intimately with rare physiological and psychological conditions, it is the duty of the inquirer to abstain altogether from framing theories until he has accumulated a sufficient number of facts to form a substantial basis upon which to reason. In the presence of strange phenomena as yet unexplored and unexplained following each other in such rapid succession, I confess it is difficult to avoid clothing their record in language of a sensational character. But, to be successful, an inquiry of this kind must be undertaken by the philosopher without prejudice and without sentiment. Romantic and superstitious ideas should be entirely banished, and the steps of his investigation should be guided by intellect as cold and passionless as the instruments he uses.

Apropos of this Mr. Cox wrote to Mr. Crooks:

The results appear to me conclusively to establish the important fact, that there is a force proceeding from the nerve-system capable of imparting motion and weight to solid bodies within the sphere of its influence.

I noticed that the force was exhibited in tremulous pulsations, and not in the form of steady continuous pressure, the indicator rising and falling incessantly throughout the experiment. The fact seems to me of great significance, as tending to confirm the opinion that assigns its source to the nerve organization, and it goes far to establish Dr. Richardson's important discovery of a nerve atmosphere of various intensity enveloping the human structure.

Your experiments completely confirm the conclusion at

which the Investigation Committee of the Dialectical Society arrived, after more than forty meetings for trial and test.

Allow me to add that I can find no evidence even tending to prove that this force is other than a force proceeding from, or directly dependent upon, the human organization, and therefore, like all other forces of nature, wholly within the province of that strictly scientific investigation to which you have been the first to subject it.

Now that it is proved by mechanical tests to be a fact in nature (and if a fact, it is impossible to exaggerate its importance to physiology and the light it must throw upon the obscure laws of life, of mind and the science of medicine) it cannot fail to command the immediate and most earnest examination and discussion by physiologists and by all who take an interest in that knowledge of "man," which has been truly termed "the noblest study of mankind."

To avoid the appearance of any foregone conclusion, I would recommend the adoption for it of some appropriate name, and I venture to suggest that the force be termed the Psychic Force; the persons in whom it is manifested in extraordinary power Psychics; and the science relating to it Psychism as, being a branch of psychology.

The preceding article was published separately by William Crookes in a special brochure which lies before me,* and which contains, in addition, the following study, not less curious from the human and anecdotical point of view than from the point of view of the experimenter in physics:

When I first stated in this journal that I was about to investigate the phenomena of so-called Spiritualism, the announcement called forth universal expressions of approval. One said that my "statements deserved respectful consideration"; another expressed "profound satisfaction that the subject was about to be investigated by a man so thoroughly qualified as," etc.; a third was "gratified to learn that the

* Experimental Investigation on Psychic Force, by William Crookes, F. R. L., etc., London, Henry Gilman, 1871. The brochure was translated into French by M. Alidel, Paris. Psychical Science Publishing House, 1897.

matter is now receiving the attention of cool and clear-headed men of recognized position in science"; a fourth asserted that "no one could doubt Mr. Crookes's ability to conduct the investigation with rigid philosophical impartiality"; and a fifth was good enough to tell its readers that "if men like Mr. Crookes grapple with the subject, taking nothing for granted until it is proved, we shall soon know how much to believe."

These remarks, however, were written too hastily. It was taken for granted by the writers that the results of my experiments would be in accordance with their preconceptions. What they really desired was not *the truth*, but an additional witness in favor of their own foregone conclusion. When they found that the facts which that investigation established could not be made to fit those opinions, why —"so much the worse for the facts." They try to creep out of their own confident recommendations of the enquiry by declaring that "Mr. Home is a clever conjurer, who has duped us all." "Mr. Crookes might, with equal propriety, examine the performances of an Indian juggler." "Mr. Crookes must get better witnesses before he can be believed." "The thing is too absurd to be treated seriously." "It is impossible, and therefore can't be." * "The observers have all been biologized (!) and fancy they saw things occur which really never took place," etc.

These remarks imply a curious oblivion of the very functions which the scientific enquirer has to fulfill. I am scarcely surprised when the objectors say that I have been deceived merely because they are unconvinced without personal investigation, since the same unscientific course of *a priori* argument has been opposed to all great discoveries. When I am told that what I describe cannot be explained in accordance with preconceived ideas of the laws of nature, the objector really begs the very question at issue, and resorts to a mode of reasoning which brings science to a standstill. The argument runs in a vicious circle: we must not assert a fact till we know that it is in accordance with the laws of nature, while our only knowledge of the laws of

* The quotation occurs to me —"I never said it was possible, I only said it was true."

nature must be based on an extensive observation of facts. If a new fact seems to oppose what is called a law of nature, it does not prove the asserted fact to be false, but only that we have not yet ascertained all the laws of nature, or not learned them correctly.

In his opening address before the British Association at Edinburgh this year (1871), Sir William Thomson said, "Science is bound by the everlasting law of honor to face fearlessly every problem which can fairly be presented to it." My object in thus placing on record the results of a very remarkable series of experiments is to present such a problem, which, according to Sir William Thomson, "Science is bound by the everlasting law of honor to face fearlessly." It will not do merely to deny its existence, or try to sneer it down. Remember, I hazard no hypothesis or theory whatever; I merely vouch for certain facts, my only object being — the *truth*. Doubt, but do not deny; point out, by the severest criticism, what are considered fallacies in my experimental tests, and suggest more conclusive trials; but do not let us hastily call our senses lying witnesses merely because they testify against preconceptions. I say to my critics, Try the experiments; investigate with care and patience as I have done. If, having examined, you discover imposture or delusion, proclaim it and say how it was done. But, if you find it be a fact, avow it fearlessly, as "by the everlasting law of honor" you are bound to do.

In this part of his work Professor Crookes recalls the experiments of Count de Gasparin and of Thury (detailed above) on the phenomenon of the movement of bodies without contact, a thing proved and demonstrated. We need not recur to that. He adds that the ecteneic force of Professor Thury and psychical force are equivalent terms, and that the nervous atmosphere or fluid of Dr. Benjamin Richardson also belongs here.

Professor Crookes sent his observations to the Royal Society, of which he is a member. The society refused his communications. The evidence goes to show that it had

only approved of the gifted chemist's mixing in heretical and occult researches on consideration of his demonstrating the fallacy of all those prodigies.

FIG. 4.

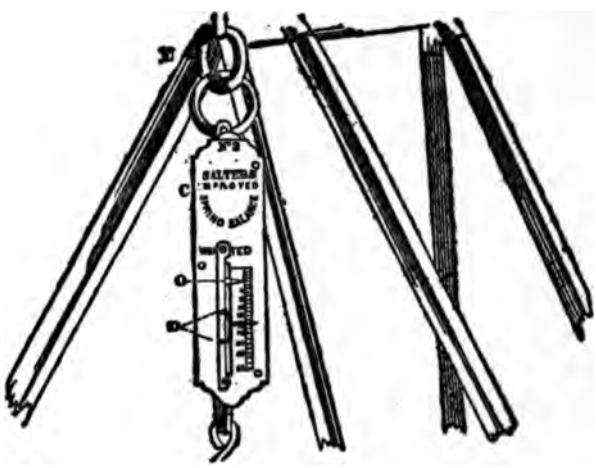


FIG. 5.

Professor Stokes, the secretary, refused to consider the subject at all, or to inscribe even the title of the papers in

the society's publications. It was an exact repetition of what took place at the Academy of Science in Paris in 1853. Professor Crookes scorned these arbitrary and anti-scientific judgments and denials and answered them by publishing the detailed description of his experiments. The following are the essential points of this description:

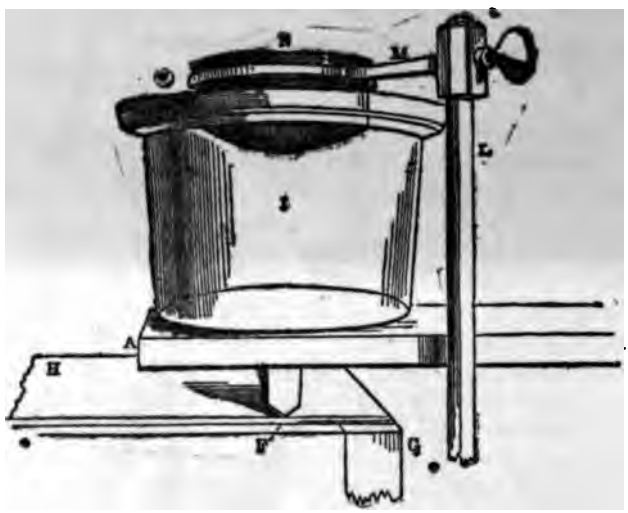


FIG. 6.

On trying these experiments for the first time, I thought that actual contact between Mr. Home's hands and the suspended body whose weight was to be altered was essential to the exhibition of the force; but I found afterwards that this was not a necessary condition, and I therefore arranged my apparatus in the following manner:

The accompanying cuts (Figs. 4, 5, 6) explain the arrangement. Fig. 4 is a general view, and Figs. 5 and 6 show the essential parts more in detail. The reference letters are the same in each illustration. A B is a mahogany board, 36 inches long by 9½ inches wide and 1 inch thick. It is suspended at the end, B, by a spring balance, C, fur-

nished with an automatic register, D. The balance is suspended from a very firm tripod support, E.

The following piece of apparatus is not shown in the figures. To the moving index, O, of the spring balance, a fine steel point is soldered, projecting horizontally outwards. In front of the balance, and firmly fastened to it, is a grooved frame carrying a flat box similar to the dark box of a photographic camera. This box is made to travel by clock-work horizontally in front of the moving index, and it contains a sheet of plate-glass which has been smoked over a flame. The projecting steel point impresses a mark on this smoked surface.

If the balance is at rest, and the clock set going, the result is a perfectly straight horizontal line. If the clock is stopped and weights are placed on the end, B, of the board, the result is a vertical line, whose length depends on the weight applied. If, whilst the clock draws the plate along, the weight of the board (or the tension on the balance) varies, the result is a curved line, from which the tension in grains at any moment during the continuance of the experiments can be calculated.

The instrument was capable of registering a diminution of the force of gravitation as well as an increase; registrations of such a diminution were frequently obtained. To avoid complication, however, I will only here refer to results in which an increase of gravitation was experienced.

The end, B, of the board being supported by the spring balance, the end, A, is supported on a wooden strip, F, screwed across its lower side and cut to a knife edge (see Fig. 6). This fulcrum rests on a firm and heavy wooden stand, G H. On the board, exactly over the fulcrum, is placed a large glass vessel filled with water, I. L is a massive iron stand, furnished with an arm and ring, M N, in which rests a hemispherical copper vessel perforated with several holes at the bottom.

The iron stand is two inches from the board, A B, and the arm and copper vessel, M N, are so adjusted that the latter dips into the water 1½ inches, being 5½ inches from the bottom of I, and 2 inches from its circumference. Shaking or striking the arm, M, or the vessel, N, produces no

appreciable mechanical effect on the board, A B, capable of affecting the balance. Dipping the hand to the fullest extent into the water in N, does not produce the least appreciable action on the balance.

As the mechanical transmission of power by Mr. Home is by this means entirely cut off between the copper vessel and the board, A B, it follows that the power of muscular control is thereby completely eliminated.

There was always ample light in the room where the experiments were conducted (my own dining-room) to see all that took place. Furthermore, I repeated the experiments, not only with Mr. Home, but also with another person possessing similar powers.

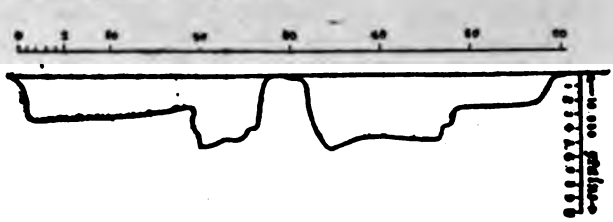


FIG. 7.

Experiment I.— The apparatus having been properly adjusted before Mr. Home entered the room, he was brought in, and asked to place his fingers in the water in the copper vessel, N. He stood up and dipped the tips of the fingers of his right hand in the water, his other hand and his feet being held. When he said he felt a power, force, or influence, proceeding from his hand, I set the clock going, and almost immediately the end, B, of the board was seen to descend slowly and remain down for about 10 seconds; it then descended a little farther, and afterwards rose to its normal height. It then descended again, rose suddenly, gradually sunk for 17 seconds, and finally rose to its normal height, where it remained till the experiment was concluded. The lowest point marked on the glass was equivalent to a direct pull of about 5,000 grains. The accompanying figure 7 is a copy of the curve traced on the glass.

Experiment II.— Contact through water having proved

to be as effectual as actual mechanical contact, I wished to see if the power or force could affect the weight, either through other portions of the apparatus or through the air. The glass vessel and iron stand, etc., were therefore removed, as an unnecessary complication, and Mr. Home's hands were placed on the stand of the apparatus at P (Fig. 4). A gentleman present put his hand on Mr. Home's hands, and his foot on both Mr. Home's feet, and I also watched him closely all the time. At the proper moment the clock was again set going; the board descended and rose in

FIG. 8.

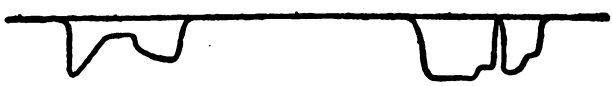


FIG. 9.

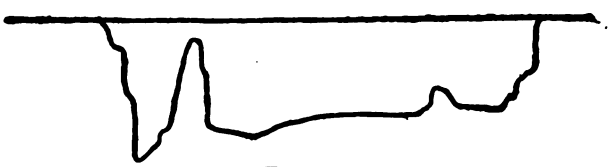


FIG. 10.

an irregular manner, the result being a curved tracing on the glass, of which Fig. 8 is a copy.

Experiment III.— Mr. Home was now placed 1 foot from the board, A B, on one side of it. His hands and feet were firmly grasped by a bystander, and another tracing, of which Fig. 9 is a copy, was taken on a moving glass plate.

Experiment IV.—(Tried on an occasion when the power was stronger than on the previous occasions.) Mr. Home was now placed three feet from the apparatus, his hands and feet being tightly held. The clock was set going when

he gave the word, and the end, B, of the board soon descended, and again rose in an irregular manner, as shown in Fig. 10.

The following series of experiments were tried with more delicate apparatus, and with another person, a lady, Mr. Home being absent. As the lady is non-professional, I do

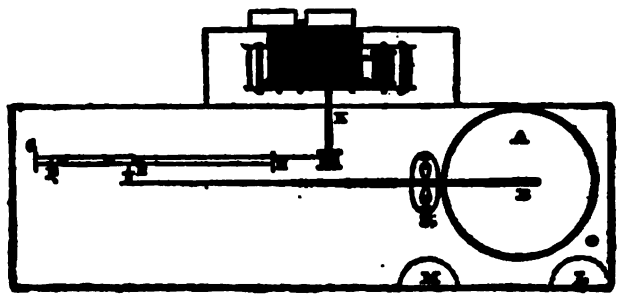


FIG. 11.

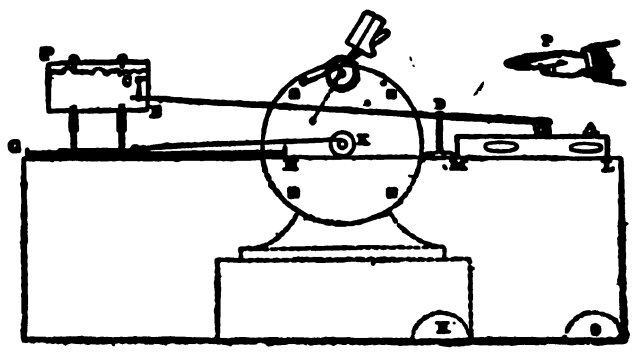


FIG. 12.

not mention her name. She has, however, consented to meet any scientific men whom I may introduce for purposes of investigation.

A piece of thin parchment, A, Figs. 11 and 12, is stretched tightly across a circular hoop of wood. B C is a light lever turning on D. At the end, B, is a vertical needle-point touching the membrane, A, and at C is another needle-point, projecting horizontally and touching a smoked glass plate,

E F. This glass plate is drawn along in the direction, H G, by clockwork, K. The end, B, of the lever is weighted so that it shall quickly follow the movements of the centre of the disc, A. These movements are transmitted and recorded on the glass plate, E F, by means of the lever and needle-point, C. Holes are cut in the side of the hoop to allow a free passage of air to the under side of the membrane. The apparatus was well tested beforehand by myself and others, to see that no shaking or jar on the table or support would interfere with the results. The line traced by the point, C, on the smoked glass was perfectly straight in spite of all our attempts to influence the lever by shaking the stand or stamping on the floor.

Experiment V.— Without having the object of the instru-

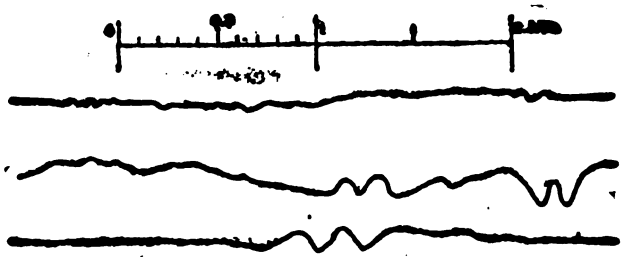


Fig. 13.

ment explained to her, the lady was brought into the room and asked to place her fingers on the wooden stand at the points, L M, Fig. 11. I then placed my hands over hers to enable me to detect any conscious or unconscious movement on her part. Presently percussive noises were heard on the parchment, resembling the dropping of grains of sand on its surface. At each percussion a fragment of graphite which I had placed on the membrane was seen to be projected upwards about 1-50th of an inch, and the end, C, of the lever moved slightly up and down. Sometimes the sounds were as rapid as those from an induction-coil, whilst at others they were more than a second apart. Five or six tracings were taken, and in all cases a movement of the end, C, of the lever was seen to have occurred with each vibration of the membrane.

In some cases the lady's hands were not so near the membrane as L M, but were at N O, Fig. 12.

The accompanying figure 13 gives tracings taken from the plates used on these occasions.

Experiment VI.— Having met with these results in Mr. Home's absence, I was anxious to see what action would be produced on the instrument in his presence.

Accordingly I asked him to try, but without explaining the instrument to him.

I grasped Mr. Home's right arm above the wrist and held

Fig. 14.

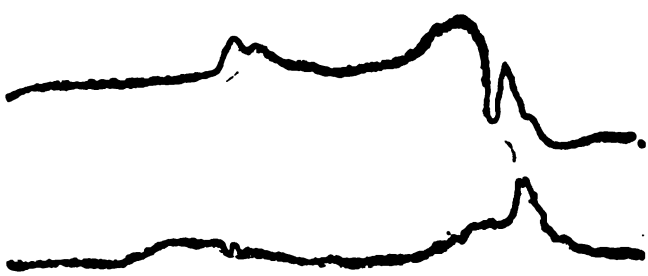


Fig. 15.

his hand over the membrane, about 10 inches from its surface, in the position shown at P, Fig. 12. His other hand was held by a friend. After remaining in this position for about half a minute, Mr. Home said he felt some influence passing. I then set the clock going, and we all saw the index, C, moving up and down. The movements were much slower than in the former case, and were almost entirely unaccompanied by the percussive vibrations then noticed.

Figs. 14 and 15 show the curves produced on the glass on two of these occasions.

Figs. 13, 14, 15 are magnified.

These experiments *confirm beyond doubt* the conclusion

at which I arrived in my former paper; namely, the existence of a force associated, in some manner not yet explained, with the human organization, by which force increased weight is capable of being imparted to solid bodies without physical contact.

Now, however, having seen more of Mr. Home, I think I perceive what it is that this psychic force uses up for its development. In employing the terms *vital force,* or *nervous energy,* I am aware that I am employing words which convey very different significations to many investigators; but after witnessing the painful state of nervous and bodily prostration in which some of these experiments have left Mr. Home — after seeing him lying in an almost fainting condition on the floor, pale and speechless — I could scarcely doubt that the evolution of psychic force is accompanied by a corresponding drain on vital force.

To witness exhibitions of this force it is not necessary to have access to known psychics. The force itself is probably possessed by all human beings, although the individuals endowed with an extraordinary amount of it are doubtless few. Within the last twelve months I have met in private families five or six persons possessing a sufficiently vigorous development to make me feel confident that similar results might be produced through their means to those here recorded, though less intense.

These experiments continued to be the object of bitter and relentless criticism on the part of the recognized authorities in science and education in England. These persons absolutely refused to recognize their value. Professor Crookes amused himself, at times, by replying to these fantastic attacks, but, naturally, without convincing his uncompromising opponents. It is unnecessary to reproduce these letters here; they can be found in the French edition of Crookes's *Researches.* The learned chemist did better still: he continued his researches into the domain of the Unknown, and got still more remarkable results — still more extraordinary, more inexplicable, more incomprehensible.

His notes continue as follows:

Like a traveler exploring some distant country, the wonders of which have hitherto been known only through reports and rumors of a vague or distorted character, so for four years have I been occupied in pushing an inquiry into a territory of natural knowledge which offers almost virgin soil to a scientific man.

As the traveller sees in the natural phenomena he may witness the action of forces governed by natural laws, where others see only the capricious intervention of offended gods, so have I endeavored to trace the operation of natural laws and forces, where others have seen only the agency of supernatural beings, owning no laws, and obeying no force but their own free will.

The phenomena I am prepared to attest are so extraordinary and so directly oppose the most firmly rooted articles of scientific belief — amongst others, the ubiquity and invariable action of the force of gravitation — that, even now, on recalling the details of what I witnessed, there is an antagonism in my mind between *reason,* which pronounces it to be scientifically impossible, and the consciousness that my senses, both of touch and sight — and these corroborated, as they were, by the senses of all who were present,— are not lying witnesses when they testify against my preconceptions.

But the supposition that there is a sort of mania or delusion which suddenly attacks a whole roomful of intelligent persons who are quite sane elsewhere, and that they all concur to the minutest particulars, in the details of the occurrences of which they suppose themselves to be witnesses, seems to my mind more incredible than even the facts they attest.

The subject is far more difficult and extensive than it appears. Four years ago I intended only to devote a leisure month or two to ascertain whether certain marvellous occurrences I had heard about would stand the test of close scrutiny. Having, however, soon arrived at the same conclusion as, I may say, every impartial inquirer, that there was "something in it," I could not, as a student of nature's laws, refuse to follow the inquiry wheresoever the facts might lead. Thus a few months have grown into a few

years, and, were my time at my own disposal it would probably extend still longer.

My principal object will be to place on record a series of actual occurrences which have taken place in my own house, in the presence of trustworthy witnesses, and under as strict test conditions as I could devise. Every fact which I have observed is, moreover, corroborated by the records of independent observers at other times and places. It will be seen that the facts are of the most astounding character, and seem utterly irreconcilable with all known theories of modern science. Having satisfied myself of their *truth,* it would be moral cowardice to withhold my testimony because my previous publications were ridiculed by critics and others who knew nothing whatever of the subject, and who were too prejudiced to see and judge for themselves whether or not there was truth in the phenomena. I shall state simply what I have seen and proved by repeated experiment and test.

Except where darkness has been a necessary condition, as with some of the phenomena of luminous appearances, and a few other instances, everything recorded has taken place *in the light.* In the few cases where the phenomena noted have occurred in darkness I have been very particular to mention the fact. Moreover, some special reason can be shown for the exclusion of light, or the results have been produced under such perfect test conditions that the suppression of one of the senses has not really weakened the evidence.

I have said that darkness is not essential. It is, however, a well-ascertained fact that when the force is weak a bright light exerts an interfering action on some of the phenomena. The power possessed by Mr. Home is sufficiently strong to withstand this antagonistic influence; consequently, he always objects to darkness at his *séances.* Indeed, except on two occasions, when, for some particular experiments of my own, light was excluded, everything which I have witnessed with him has taken place in the light. I have had many opportunities of testing the action of light on different sources and colors,— such as sunlight, diffused daylight, moonlight, gas, lamp, and candle-light, electric light from a

vacuum tube, homogeneous yellow light, etc. The interfering rays appear to be those at the extreme end of the spectrum.

Professor Crookes next proceeds to classify the phenomena observed by him, going from the more simple to the more complex and giving in rapid review under each head, a sketch of some of the facts. In the abridgment of his report which follows I eliminate what has already been fully demonstrated elsewhere in this book.

FIRST CLASS: *The movement of Heavy Bodies with Contact, but without Mechanical Exertion.*

(This movement has been fully proved in this volume.)

SECOND CLASS: *The Phenomena of Percussive and other Allied Sounds.*

An important question here forces itself upon the attention. *Are the movements and sounds governed by intelligence?* At a very early stage of the inquiry, it was seen that the power producing the phenomena was not merely a blind force, but was associated with or governed by intelligence. Thus the sounds to which I have just alluded will be repeated a definite number of times. They will come loud or faint, and in different places at request; and by a pre-arranged code of signals, questions are answered, and messages given with more or less accuracy.

The intelligence governing the phenomena is sometimes manifestly below that of the medium. It is frequently in direct opposition to the wishes of the medium. When a determination has been expressed to do something which might not be considered quite right, I have known urgent messages given to induce a reconsideration. The intelligence is sometimes of such a character as to lead to the belief that it does not emanate from any person present.

THIRD CLASS: *The Alteration of Weights of Bodies.*— (Experiments which have been already described.)

FOURTH CLASS: *Movements of Heavy Substances when at a distance from the Medium.*— The instances in which heavy bodies, such as tables, chairs, sofas, etc., have been moved, when the medium has not been touching them, are

very numerous. I will briefly mention a few of the most striking. My own chair has been twisted partly round, whilst my feet were off the floor. A chair was seen by all present to move slowly up to the table from a far corner, when all were watching it. On another occasion an arm-chair moved to where we were sitting, and then moved slowly back again (a distance of about three feet) at my request. On three successive evenings a small table moved slowly across the room, under conditions which I had specially pre-arranged, so as to answer any objection which might be raised to the evidence. I have had several repetitions of the experiment considered by the Committee of the Dialectical Society to be conclusive, viz., the movement of a heavy table, in full light, the chairs turned with their backs to the table, about a foot off, and each person kneeling on his chair, with hands resting over the back of the chair, but not touching the table. On one occasion this took place when I was moving about so as to see how everyone was placed.

FIFTH CLASS: *The Rising of Tables and Chairs off the Ground, without Contact with any Person.*

(We need not recur to these matters.)

SIXTH CLASS: *The Levitation of Human Beings.*— The most striking cases of levitation which I have witnessed have been with Mr. Home. On three separate occasions have I seen him raised completely from the floor of the room. Once sitting in an easy-chair, once kneeling on his chair, and once standing up. On each occasion I had full opportunity of watching the occurrence as it was taking place.

There are at least a hundred recorded instances of Mr. Home's rising from the ground, in the presence of as many separate persons, and I have heard from the lips of the three witnesses to the most striking occurrence of this kind — the Earl of Dunraven, Lord Lindsay, and Captain C. Wynne — their own most minute accounts of what took place. To reject the recorded evidence on this subject is to reject all human testimony whatever; for no fact in sacred or profane history is supported by a stronger array of proofs.

SEVENTH CLASS: *Movement of Various Small Articles without Contact with any Person.*—(As in the case of the sixth class, this is well known to my readers.)

EIGHTH CLASS: *Luminous Appearances.*— These, being rather faint, generally require the room to be darkened. I need scarcely remind my readers again that, under these circumstances, I have taken proper precautions to avoid being imposed upon by phosphorized oil or other means. Moreover, many of these lights are such as I have tried to imitate artificially, but cannot.

Under the strictest test conditions, I have seen a solid self-luminous body, the size and nearly the shape of a turkey's egg, float noiselessly about the room, at one time higher than any one present could reach standing on tiptoe, and then gently descend to the floor. It was visible for more than ten minutes, and before it faded away it struck the table three times with a sound like that of a hard solid body. During this time the medium was lying back, apparently insensible, in an easy-chair.

I have seen luminous points of light darting about and settling on the heads of different persons; I have had questions answered by the flashing of a bright light a desired number of times in front of my face. I have seen sparks of light rising from the table to the ceiling, and again falling upon the table, striking it with an audible sound. I have had an alphabetic communication given by luminous flashes occurring before me in the air, whilst my hand was moving about amongst them. I have seen a luminous cloud floating upwards to a picture. Under the strictest test conditions, I have more than once had a solid, self-luminous, crystalline body placed in my hand by a hand which did not belong to any person in the room. *In the light,* I have seen a luminous cloud hover over a heliotrope on a side table, break a sprig off, and carry it to a lady; and on some occasions I have seen a similar luminous cloud visibly condense to the form of a hand and carry small objects about.

NINTH CLASS: *The Appearance of Hands, either Self-Luminous or Visible by Ordinary Light.*— During a séance in full light a beautifully-formed small hand rose up from an opening in a dining-table and gave me a flower; it appeared and then disappeared three times at intervals, affording me ample opportunity of satisfying myself that it was as real in appearance as my own. This occurred in the light

in my own room, whilst I was holding the medium's hands and feet.

On another occasion, a small hand and arm, like a baby's, appeared playing about a lady who was sitting next to me. It then patted my arm and pulled my coat several times.

At another time, a finger and thumb were seen to pick the petals from a flower in Mr. Home's button-hole, and lay them in front of several persons who were sitting near him.

A hand has been repeatedly seen by myself and others playing the keys of an accordion, both of the medium's hands being visible at the same time, and sometimes being held by those near him.

The hands and fingers do not always appear to me to be solid and life-like. Sometimes, indeed, they present more the appearance of a nebulous cloud partly condensed into the form of a hand. This is not equally visible to all present. For instance, a flower or other small object is seen to move; one person present will see a luminous cloud hovering over it, another will detect a nebulous-looking hand, whilst others will see nothing at all but the moving flower. I have more than once seen, first an object move, then a luminous cloud appear to form about it, and, lastly, the cloud condense into shape and become a perfectly-formed hand. At this stage the hand is visible to all present. It is not always a mere form, but sometimes appears perfectly life-like and graceful, the fingers moving, and the flesh apparently as human as that of any in the room. At the wrist, or arm, it becomes hazy, and fades off into a luminous cloud.

To the touch, the hand sometimes appears icy-cold and dead, at other times, warm and life-like, grasping my own with the firm pressure of an old friend.

I have retained one of these hands in my own, firmly resolved not to let it escape. There was no struggle or effort made to get loose, but it gradually seemed to resolve itself into vapor, and faded in that manner from my grasp.

TENTH CLASS: *Direct Writing.*—(The learned chemist cites some remarkable examples obtained by him. We need not speak of them in this book.)

ELEVENTH CLASS: *Phantom Forms and Faces.*— These are the rarest of the phenomena I have witnessed. The con-

ditions requisite for their appearance appear to be so delicate, and such trifles interfere with their production, that only on very few occasions have I witnessed them under satisfactory test conditions. I will mention two of these cases.

In the dusk of the evening, during a *séance* with Mr. Home at my house, the curtains of a window about eight feet from Mr. Home were seen to move. A dark, shadowy, semi-transparent form, like that of a man, was then seen by all present standing near the window, waving the curtain with his hand. As we looked, the form faded away, and the curtains ceased to move.

The following is a still more striking instance. As in the former case, Mr. Home was the medium. A phantom form came from a corner of the room, took an accordion in its hand, and then glided about the room playing the instrument. The form was visible to all present for many minutes, Mr. Home also being seen at the same time. Coming rather close to a lady who was sitting apart from the rest of the company, she gave a slight cry, upon which it vanished.

TWELFTH CLASS: *Special Instances which seem to point to the Agency of an Exterior Intelligence.*— It has already been shown that the phenomena are governed by an intelligence. It becomes a question of importance as to the source of that intelligence. Is it the intelligence of the medium, of any of the other persons in the room, or is it an exterior intelligence? Without wishing at present to speak positively on this point, I may say that whilst I have observed many circumstances which appear to show that the will and intelligence of the medium have much to do with the phenomena, I have observed some circumstances which seem conclusively to point to the agency of an outside intelligence, not belonging to any human being in the room. Space does not allow me to give here all the arguments which can be adduced to prove these points, but I will briefly mention one or two circumstances out of many.

I have been present when several phenomena were going on at the same time, some being unknown to the medium. I have been with Miss Fox when she has been writing a message automatically to one person present, whilst a message

to another person on another subject was being given alphabetically by means of "raps," and the whole time she was conversing freely with a third person on a subject totally different from either.

Perhaps a more striking instance is the following:

During a *séance* with Mr. Home, a small lath, which I have before mentioned, moved across the table to me, in the light, and delivered a message to me by tapping my hand, I repeating the alphabet, and the lath tapping me at the right letters. The other end of the lath was resting on the table, some distance from Mr. Home's hands.

The taps were so sharp and clear, and the lath was evidently so well under control of the invisible power which was governing its movements, that I said, "Can the intelligence governing the motion of this lath change the character of the movements, and give me a telegraphic message through the Morse alphabet by taps on my hand?" (I have every reason to believe that the Morse code was quite unknown to any other person present, and it was only imperfectly known to me.) Immediately I said this, the character of the taps changed, and the message was continued in the way I had requested. The letters were given too rapidly for me to do more than catch a word here and there, and consequently I lost the message; but I heard sufficient to convince me that there was a good Morse operator at the other end of the line, wherever that might be.

Another instance. A lady was writing automatically by means of the planchette. I was trying to devise a means of proving that what she wrote was not due to "unconscious cerebration." The planchette, as it always does, insisted that, although it was moved by the hand and the arm of the lady, the *intelligence* was that of an invisible being who was playing on her brain as on a musical instrument, and thus moving her muscles. I therefore said to this intelligence, "Can you see the contents of this room?" "Yes," wrote the planchette. "Can you see to read this newspaper?" said I, putting my finger on a copy of the *Times*, which was on a table behind me, but without looking at it. "Yes," was the reply of the planchette. "Well," I said, "if you can see that, write the word which is now covered by my

finger, and I will believe you." The planchette commenced to move. Slowly and with great difficulty the word "however" was written. I turned round and saw that the word "however" was covered by the tip of my finger.

I had purposely avoided looking at the newspaper when I tried this experiment, and it was impossible for the lady, had she tried, to have seen any of the printed words, for she was sitting at one table, and the paper was on another table behind, my body intervening.

THIRTEENTH CLASS: *Miscellaneous Occurrences of a Complex Character.*

(Professor Crookes here cites two examples of the *transference of matter through matter,*— a bell passing from neighboring room into that in which the séance was being held, and a flower separating from a bouquet and *passing through the table.*)

The space at my disposal will not permit me to give more details here; but all my readers must appreciate, as I do, the importance of these experiments of the eminent chemist. I will especially call attention to the proofs they afford of the presence of a mind or intelligence, other than that of the experimenters; to the formation of hands and spirit-forms; and to the passage of matter through matter.

These experiments date from the years 1871 to 1873. During the last mentioned year, a new medium, endowed with particularly remarkable powers, appeared in London, namely, Miss Florence Cook, who was born in 1856, and was, therefore, seventeen in 1873. Since the preceding year (1872), she had often seen the apparition by her side of a young girl. This spectral form had taken a liking to her, and told her she was called *Katie King* in the other world, and had been a lady called Annie Morgan during one of her lives on earth. Some observers told marvellous stories of these apparitions, which they also saw,— among them being William Harrison, Benjamin Coleman, Mr. Luxmore, Dr. Sexton, Dr. Gully, the Prince of Sayn Wittgenstein, who

have all published accounts of them which breathe an air of sincere belief. Professor Crookes got in touch with this new medium in December, 1873. In *The Spiritualist* — a journal edited by Mr. Harrison, at whose home several sittings had taken place — there appeared in the numbers for February and March, 1874, two letters from Professor Crookes. A few extracts from these letters here follow:

I have reason to know that the power at work in these phenomena, like Love, "laughs at locksmiths."

The séance of which you speak and at which I was present, was held at the house of Mr. Luxmore, and the "cabinet" was a back drawing-room separated from the front room in which the company sat by a curtain.

The usual formality of searching the room and examining the fastenings having been gone through, Miss Cook entered the cabinet.

After a little time the form of Katie appeared at the side of the curtain, but soon retreated, saying her medium was not well, and could not be put into a sufficiently deep sleep to make it safe for her to be left.

I was sitting within a few feet of the curtain close behind which Miss Cook was sitting, and I could frequently hear her moan and sob, as if in pain. This uneasiness continued at intervals nearly the whole duration of the *séance, and once, when the form of Katie was standing before me in the room, I distinctly heard a sobbing, moaning sound, identical with that which Miss Cook had been making at intervals the whole time of the séance, come from behind the curtain where the young lady was supposed to be sitting.*

I admit that the figure was startlingly life-like and real, and, as far as I could see in the somewhat dim light, the features resembled those of Miss Cook; but still the positive evidence of one of my own senses that the moan came from Miss Cook in the cabinet, whilst the figure was outside, is too strong to be upset by a mere inference to the contrary, however well supported.

Your readers, sir, know me, and will, I hope, believe that I will not come hastily to an opinion, or ask them to agree with me on insufficient evidence. It is perhaps expecting

too much to think that the little incident I have mentioned will have the same weight with them that it had with me. But this I do beg of them — Let those who are inclined to judge Miss Cook harshly suspend their judgment until I bring forward positive evidence which I think will be sufficient to settle the question.

Miss Cook is now devoting herself exclusively to a series of private séances with me and one or two friends. The séances will probably extend over some months, and I am promised that every desirable test shall be given to me. These séances have not been going on many weeks, but enough has taken place to thoroughly convince me of the perfect truth and honesty of Miss Cook, and to give me every reason to expect that the promises so freely made to me by Katie will be kept.

WILLIAM CROOKES.

Here is the second letter from the cautious investigator:

In a letter which I wrote to this journal early in February last, speaking of the phenomena of spirit-forms which have appeared through Miss Cook's mediumship, I said, "Let those who are inclined to judge Miss Cook harshly suspend their judgment until I bring forward positive evidence which I think will be sufficient to settle the question."

In that letter I described an incident which, to my mind, went very far towards convincing me that Katie and Miss Cook were two separate material beings. When Katie was outside the cabinet, standing before me, I heard a moaning noise from Miss Cook in the cabinet. I am happy to say that I have at last obtained the "absolute proof" to which I referred in the above-quoted letter.

On March 12th, during a séance here, after Katie had been walking amongst us and talking for some time, she retreated behind the curtain which separated my laboratory, where the company was sitting, from my library which did temporary duty as a cabinet. In a minute she came to the curtain and called me to her, saying, "Come into the room and lift my medium's head up, she has slipped down." Katie was then standing before me clothed in her usual white robes and turban head-dress. I immediately walked into the library up to Miss Cook, Katie stepping aside to

allow me to pass. I found Miss Cook had slipped partially off the sofa, and her head was hanging in a very awkward position. I lifted her on to the sofa, and in so doing had satisfactory evidence, in spite of the darkness, that Miss Cook was not attired in the "Katie" costume, but had on her ordinary black velvet dress, and was in a deep trance. Not more than three seconds elapsed between my seeing the white-robed Katie standing before me and my raising Miss Cook onto the sofa from the position into which she had fallen.

On returning to my post of observation by the curtain, Katie again appeared, and said she thought she would be able to show herself and her medium to me at the same time. The gas was then turned out and she asked for my phosphorus lamp. After exhibiting herself by it for some seconds, she handed it back to me, saying, "Now come in and see my medium." I closely followed her into the library, and by the light of my lamp saw Miss Cook lying on the sofa just as I had left her. I looked round for Katie, but she had disappeared. I called her, but there was no answer.

On resuming my place, Katie soon reappeared, and told me that she had been standing close to Miss Cook all the time. She then asked if she might try an experiment herself, and taking the phosphorus lamp from me she passed behind the curtain, asking me not to look in for the present. In a few minutes she handed the lamp back to me, saying she could not succeed, as she had used up all the power, but would try again another time. My eldest son, a lad of fourteen, who was sitting opposite me, in such a position that he could see behind the curtain, tells me he distinctly saw the phosphorus lamp apparently floating about in space over Miss Cook, illuminating her as she lay motionless on the sofa, but he could not see anyone holding the lamp.

I pass on to a séance held last night at Hackney. Katie never appeared to greater perfection, and for nearly two hours she walked about the room, conversing familiarly with those present. On several occasions she took my arm when walking, and the impression conveyed to my mind that it was a living woman by my side, instead of a visitor from the other world, was so strong that the temptation to repeat a recent celebrated experiment became almost irresistible.

Feeling, however, that if I had not a spirit, I had at all events a *lady* close to me, I asked her permission to clasp her in my arms, so as to be able to verify the interesting observations which a bold experimentalist has recently somewhat verbosely recorded. Permission was graciously given, and I accordingly did — well, as any gentleman would do under the circumstances. Mr. Volckman will be pleased to know that I can corroborate his statement that the "ghost" (not "struggling" however) was as material a being as Miss Cook herself.

Katie now said she thought she would be able this time to show herself and Miss Cook together. I was to turn the gas out, and then come with my phosphorus lamp into the room now used as a cabinet. This I did, having previously asked a friend who was skillful at shorthand to take down any statement I might make when in the cabinet, knowing the importance attaching to first impressions, and not wishing to leave more to memory than necessary. His notes are now before me.

I went cautiously into the room, it being dark, and felt about for Miss Cook. I found her crouching on the floor.

Kneeling down, I let air enter the lamp, and by its light I saw the young lady dressed in black velvet, as she had been in the early part of the evening, and to all appearance perfectly senseless; she did not move when I took her hand and held the light quite close to her face, but continued quietly breathing.

Raising the lamp, I looked around and saw Katie standing close behind Miss Cook. She was robed in flowing white drapery as we had seen her previously during the séance. Holding one of Miss Cook's hands in mine, and still kneeling, I passed the lamp up and down so as to illuminate Katie's whole figure, and satisfy myself thoroughly that I was really looking at the veritable Katie whom I had clasped in my arms a few minutes before, and not at the phantasm of a disordered brain. She did not speak, but moved her head and smiled in recognition. Three separate times did I carefully examine Miss Cook crouching before me, to be sure that the hand I held was that of a living woman, and three separate times did I turn the lamp to

Katie and examine her with steadfast scrutiny, until I had no doubt whatever of her objective reality. At last Miss Cook moved slightly, and Katie instantly motioned me to go away. I went to another part of the cabinet, and then ceased to see Katie, but did not leave the room till Miss Cook woke up, and two of the visitors came in with a light.

Before concluding this article I wish to give some of the points of difference which I have observed between Miss Cook and Katie. Katie's height varies; in my house I have seen her six inches taller than Miss Cook. Last night, with bare feet, and not "tiptoeing," she was four-and-a-half inches taller than Miss Cook. Katie's neck was bare last night; the skin was perfectly smooth both to touch and sight, whilst on Miss Cook's neck is a large blister, which under similar circumstances is distinctly visible and rough to the touch. Katie's ears are unpierced, whilst Miss Cook habitually wears earrings. Katie's complexion is very fair, while that of Miss Cook is very dark. Katie's fingers are much longer than Miss Cook's, and her face is also larger. In manners and ways of expression there are also many decided differences.

After the observations summarized in these two letters Professor Crookes continued his experiments at his own home, for a space of two months. The result of all is embodied in the following statements made by Crookes himself:

During the week before Katie took her departure she gave séances at my house almost nightly, to enable me to photograph her by artificial light. Five complete sets of photographic apparatus were accordingly fitted up for the purpose, consisting of five cameras, one of the whole-plate size, one half-plate, one quarter-plate, and two binocular stereoscopic cameras, which were all brought to bear upon Katie at the same time on each occasion on which she stood for her portrait. Five sensitizing and five fixing baths were used, and plenty of plates were cleaned ready for use in advance, so that there might be no hitch or delay during

the photographic operations, which were performed by myself, aided by one assistant.

My library was used as a dark cabinet. It has folding doors opening into the laboratory; one of these doors was taken off its hinges, and a curtain suspended in its place to enable Katie to pass in and out easily. Those of our friends who were present were seated in the laboratory facing the curtain, and the cameras were placed a little behind them, ready to photograph Katie when she came outside, and to photograph anything also inside the cabinet, whenever the curtain was withdrawn for the purpose. Each evening there were three or four exposures of plates in the five cameras, giving at least fifteen separate pictures at each séance; some of these were spoilt in the developing, and some in regulating the amount of light. Altogether, I have forty-four negatives, some inferior, some indifferent, and some excellent.

Katie instructed all the sitters but myself to keep their seats and to keep conditions; but for some time past she has given me permission to do what I liked — to touch her, and to enter and leave the cabinet almost whenever I pleased. I have frequently followed her into the cabinet, and have sometimes seen her and her medium together, but most generally I have found nobody but the entranced medium lying on the floor, Katie and her white robes having instantaneously disappeared.

During the last six months Miss Cook has been a frequent visitor at my house, remaining sometimes a week at a time. She brings nothing with her but a little hand-bag, not locked. During the day she is constantly in the presence of Mrs. Crookes, myself, or some other member of my family, and, not sleeping by herself, there is absolutely no opportunity for any preparation even of a less elaborate character than would be required for enacting Katie King. I prepare and arrange my library myself as the dark cabinet, and usually, after Miss Cook has been dining and conversing with us, and scarcely out of our sight for a minute, she walks directly into the cabinet, and I, at her request, lock its second door, and keep possession of the key all through the séance. The gas is then turned out, and Miss Cook is left in darkness.

On entering the cabinet, Miss Cook lies down upon the floor, with her head on a pillow, and is soon entranced. During the photographic séance, Katie muffled her medium's head up in a shawl to prevent the light falling upon her face. I frequently drew the curtain on one side when Katie was standing near, and it was a common thing for the seven or eight of us in the laboratory to see Miss Cook and Katie at the same time, under the full blaze of the electric light. We did not on these occasions actually see the face of the medium because of the shawl, but we saw her hands and feet; we saw her move uneasily under the influence of the intense light, and we heard her moan occasionally. I have one photograph of the two together, but Katie is seated in front of Miss Cook's head.

During the time I took an active part in these séances Katie's confidence in me gradually grew, until she refused to give a séance unless I took charge of the arrangements. She said she always wanted me to keep close to her, and near the cabinet, and I found that after this confidence was established, and she was satisfied I would not break any promise I might make to her, the phenomena increased greatly in power, and tests were freely given that would have been unobtainable had I approached the subject in another manner. She often consulted me about persons present at the séances, and where they should be placed, for of late she had become very nervous, in consequence of certain ill-advised suggestions that force should be employed as an adjunct to more scientific modes of research.

One of the most interesting of the pictures is one in which I am standing by the side of Katie; she has her bare foot upon a particular part of the floor. Afterwards I dressed Miss Cook like Katie, placed her and myself in exactly the same position, and we were photographed by the same cameras, placed exactly as in the other experiment, and illuminated by the same light. When these two pictures are placed over each other, the two photographs of myself coincide exactly as regards stature, etc., but Katie is half a head taller than Miss Cook, and looks a big woman in comparison with her. In the breadth of her face, in many of the pictures, she differs essentially in size from her medium,

and had shamefully deceived the eminent scientist, and as for mediums, why *there was only one absolutely trustworthy and that was himself, Daniel Dunglas Home!* He even added that the fiancé of Miss Cook had given striking proofs of her extreme cantankerousness!

He who has observed at close hand the rivalries of mediums — which are as strongly marked as those of doctors, actors, musicians and women — will not, it seems to me, find in this talk of Home any intrinsic value whatever. But I must confess that this matter of Katie King is really so extraordinary that I am forced to try every possible explanation before admitting its truth. This is also the opinion of Mr. Crookes himself.

In order to convince myself (says he) I was constantly on my guard, and Miss Cook readily assisted me in all my investigations. Every test that I have proposed she has at once agreed to submit to with the utmost willingness; she is open and straightforward in speech, and I have never seen anything approaching the slightest symptom of a wish to deceive. Indeed, I do not believe she could carry on a deception if she were to try, and if she did she would certainly be found out very quickly, for such a line of action is altogether foreign to her nature. And to imagine that an innocent school-girl of fifteen would be able to conceive and then successfully carry out for three years so gigantic an imposture as this, and in that time would submit to any test which might be imposed upon her, would bear the strictest scrutiny, would be willing to be searched at any time, either before or after a séance, and would meet with even better success in my own house than at that of her parents, knowing that she visited me with the express object of submitting to strict scientific tests — to imagine, I say, the Katie King of the last three years to be the result of imposture does more violence to one's reason and common sense than to believe her to be what she herself affirms.

It will perhaps not be superfluous to round out these ac-

am Crookes by giving an extract from the *ritualist* of the 29th of May, 1874.

inning of the mediumship of Miss Cook, the g or Annie Morgan, who had produced the of the physical part of the manifestations, that she would not be able to be with her than three years, and that after that time od-bye to her forever.
at period came last Thursday; but before dium, she gave her friends three more

place on Thursday, the 21st of May, 1874.
tors was Prof. William Crookes.
evening Professor Crookes led Miss Cook binet, where she lay down upon the floor, on a cushion. At 7.28 Katie spoke for d at 7.30 she showed herself outside of the ll form. She was dressed in white, short neck. She had long light auburn hair of a in curls on each side of her head and down waist. She wore a long white veil which own over her face more than once or twice g.
ore a light blue merino robe. During al- the séance, Katie remained standing before of the cabinet was drawn aside and all see the medium lying asleep, having her a red shawl, in order to shield it from the ke of her approaching departure and ac- which Mr. Tapp had brought her, as well es offered by Mr. Crookes. She asked Mr. bouquet and to put the flowers before her he then sat down in the Turkish style and around her in the same way. Then she di- rs and gave to each a little bouquet tied up bon.
rote letters to some of her friends, signing Owen Morgan," saying that was her true her life on earth. She also wrote a letter to

her medium, and chose for her a rosebud as a good-bye gift. Katie then took the scissors, cut off a lock of her hair and gave some of it to all of us. She then took Mr. Crookes' hand and made the tour of the room, pressing the hand of each of us in turn. She then sat down again and cut off several pieces of her robe and of her veil for remembrances. Seeing such holes in her robe (she being seated all this while between Mr. Crookes and Mr. Tapp), some one asked her if she could repair the damage, as she had done on previous occasions. She then held the cut part of the robe in the light, gave one rap upon it, and instantly that part was whole and unblemished as before. Those near her touched and examined the stuff, with her permission. They affirmed that there was neither hole nor seam, nor anything added at the very place where an instant before they had seen holes several inches in diameter.

She next gave her last instructions to Mr. Crookes. Then, seeming fatigued, she added that her force was disappearing, and repeated her good-bye to everyone in the most affectionate manner. All present thanked her for the wonderful manifestations which she had given them.

While she was directing toward her friends a last grave and pensive look, she let fall the curtain, and it hid her from our view. We heard her waking up the medium, who begged her with tears to remain a little longer. But Katie said, "It is impossible, my dear; my mission is accomplished; God bless you!" And we heard the sound of a kiss. The medium then came out among us wholly exhausted and in a state of deep dismay.

Such are the experiments of Sir William Crookes. I have restricted myself to relating his own personal observations, as set forth by himself. The story of Katie King is truly one of the most mysterious, the most incredible, to be found in the whole history of Spiritualistic research, and is at the same time, one of the cases that have been most scrupulously studied by the experimental method, including photography.

The medium, Miss Florence Cook, married in 1874 Mr.

Elgie Corner, and, from that time on, her contributions to psychical research almost ceased. I have several times been assured that she also had been caught in the very act of cheating. (Always that feminine hysteria!) But the investigations of Crookes were conducted with such care and competence, that it is very difficult to refuse our credence. Besides, this scientist was not the only one to study the mediumship of Florence Cook. Among other works that may be consulted on this subject is one containing a large number of proofs and testimonies, as well as several photographs (alluded to above).*

These recorded cases, or testimonies, form a collection of records, the study of which is most instructive. The study of the great chemist surpass the rest, to be sure, but it does not diminish the intrinsic value of the others. All the observations agree and mutually confirm each other.

As to the explanation of the phenomena, Crookes thinks that we cannot discover it. Was this apparition what it claimed to be? There is nothing to prove it.

Might it not be a *double* of the medium, a product of her psychic force?

The learned chemist did not change his opinion (as has been claimed) about the authenticity of the phenomena studied by him. In an address delivered at a meeting of the British Association for the Advancement of Science, held at Bristol in 1898, and of which he was President, he expressed himself as follows:

No incident in my scientific career is more widely known than the part I took many years ago in certain psychic researches. Thirty years have passed since I published an account of experiments tending to show that outside our

* Katie King, *The Story of her Appearances*. Paris, Leymarie, 1899. I thought I would not reproduce these photographs here, because they did not seem to me to have come from Mr. Crookes himself. Florence Cook died in London on the 2d of April, 1904.

scientific knowledge there exists a Force exercised by intelligence differing from the ordinary intelligence common to mortals. This fact in my life is, of course, well understood by those who honored me with the invitation to become your President. Perhaps among my audience some may feel curious as to whether I shall speak out or be silent. I elect to speak, although briefly.

To enter at length on a still debatable subject would be to insist on a topic which,— as Wallace, Lodge and Barrett have already shown,— though not unfitted for discussion at these meetings, does not yet enlist the interest of the majority of my scientific brethren. To ignore the subject would be an act of cowardice, an act of cowardice I feel no temptation to commit.

To stop short in any research that bids fair to widen the gates of knowledge, to recoil from fear of difficulty or adverse criticism, is to bring reproach on science. There is nothing for the investigator to do but to go straight on, "to explore up and down, inch by inch, with the taper, his reason;" to follow the light wherever it may lead, even should it at times resemble a will-o'-the wisp.

I have nothing to retract. I adhere to my already published statements. Indeed, I might add much thereto. I regret only a certain crudity in those early expositions, which, no doubt justly, militated against their acceptance by the scientific world. My own knowledge at that time scarcely extended beyond the fact that certain phenomena new to science had assuredly occurred, and were attested by my own sober senses, and, better still, by automatic record.

I was like some two-dimensional being who might stand at the singular point of a Riemann's surface, and thus find himself in infinitesimal and inexplicable contact with a plane of existence not his own.

I think I see a little farther now. I have glimpses of something like coherence among the strange elusive phenomena; of something like continuity between those unexplained forces and laws already known. This advance is largely due to the labors of another Association of which I have also this year the honor to be President — the Society for Psychical Research. And were I now introducing for

the first time these inquiries to the world of science I should choose a starting point different from that of old. It would be well to begin with *telepathy;* with the fundamental law, as I believe it to be, that thoughts and images may be transferred from one mind to another without the agency of the recognized organs of sense, that knowledge may enter the human mind without being communicated in any hitherto known or recognized ways.

Although the inquiry has elicited important facts with reference to the mind, it has not yet reached the scientific stage of certainty which would entitle it to be usefully brought before one of our sections. I will therefore confine myself to pointing out the direction in which scientific investigation can legitimately advance.

If telepathy take place we have two physical facts — the physical change in the brain of A, the suggester, and the analogous physical change in the brain of B, the recipient of the suggestion. Between these two physical events there must exist a train of physical causes. Whenever the connecting sequence of intermediate causes begins to be revealed the inquiry will then come within the range of one of the sections of the British Association. Such a sequence can only occur through an intervening medium. All the phenomena of the universe are presumably in some way continous, and it is unscientific to call in the aid of mysterious agencies when with every fresh advance in knowledge it is shown that ether vibrations have powers and attributes abundantly equal to any demand — even to the transmission of thought. It is supposed by some physiologists that the essential cells of nerves do not actually touch, but are separated by a narrow gap which widens in sleep while it narrows almost to extinction during mental activity. This condition is so singularly like that of a Branly or Lodge coherer as to suggest a further analogy.

The structure of brain and nerve being similar, it is conceivable there may be present masses of such nerve coherers in the brain whose special function it may be to receive impulses brought from without through the connecting sequence of ether waves of appropriate order of magnitude. Röntgen has familiarized us with an order of vibrations of extreme

minuteness compared with the smallest waves with which we have hitherto been acquainted, and of dimensions comparable with the distances between centers of the atoms of which the material universe is built up; and there is no reason to suppose that we have here reached the limit of frequency. It is known that the action of thought is accompanied by certain molecular movements in the brain, and here we have physical vibrations capable from their extreme minuteness of acting directly on individual molecules, while their rapidity approaches that of the internal and external movements of the atoms themselves.

Confirmation of telepathic phenomena is afforded by many converging experiments, and by many spontaneous occurrences only thus intelligible. The most varied proof, perhaps, is drawn from analysis of the sub-conscious workings of the mind, when these, whether by accident or design, are brought into conscious survey. Evidence of a region below the threshold of consciousness has been presented, since its first inception, in the "Proceedings of the Society for Psychical Research;" and its various aspects are being interpreted and welded into a comprehensive whole by the pertinacious genius of F. W. H. Myers.

A formidable range of phenomena must be scientifically sifted before we effectually grasp a faculty so strange, so bewildering, and for ages so inscrutable, as the direct action of mind on mind.

An eminent predecessor in this chair declared that "by an intellectual necessity he crossed the boundary of experimental evidence, and discerned in that matter, which we, in our ignorance of its latent powers, and notwithstanding our professed reverence for its Creator, have hitherto covered with opprobrium, the potency and promise of all terrestrial life." I should prefer to reverse the apophthegm, and to say that in life I see the promise and potency of all forms of matter.

In old Egyptian days a well-known inscription was carved over the portal of the temple of Isis: "I am whatever hath been, is, or ever will be; and my veil no man hath yet lifted." Not thus do modern seekers after truth confront Nature,— the word that stands for the baffling mysteries of

the Universe. Steadily, unflinchingly, we strive to pierce the inmost heart of Nature, from what she is to re-construct what she has been, and to prophesy what she yet shall be. Veil after veil we have lifted, and her face grows more beautiful, august, and wonderful, with every barrier that is withdrawn.

It would be difficult to find truer thought better expressed. It is the language of true science, and is also the expression of the highest philosophy.

CHAPTER X

SUNDRY EXPERIMENTS AND OBSERVATIONS

Abundant testimony as to the existence of a hitherto little explored psychic realm has doubtless been given in the preceding pages. Mediumistic phenomena proclaim the existence of unknown forces. It is almost superfluous to heap up in this place a still greater number of recorded instances.

However, these facts are so extraordinary, so incomprehensible, so hard to believe, that a mere increase in the number of cases is not without value, especially when they are furnished by men of incontestable skill and learning. The old law proverb *Testis unus, testis nullus* ("One witness is no witness") is applicable here. We must not verify once, we must verify a hundred times, such apparently scientific extravagances, in order to make sure they are not delusions, but sober facts.

In short, the whole subject is so curious, so strange that the investigator of these mysteries is never surfeited.

Hence, in addition to what has already been given, I shall select and present in this place, out of the immense collection of observations which I have for a long time been making, those which most strike the attention and give added confirmation to what has preceded.

In addition to the experiments of Crookes, it is fitting to add in this place those of the great English naturalist, Alfred Russel Wallace, also a member of the Royal Society of London, President of the English Anthropological Society, and well known as the scientist, who at the same time with Dar-

win (June, 1858), gave to the world the theory of the variation of species by natural selection.

He himself gives the following account* of his studies in this matter of the mysterious pyschic force:

It was in the summer of 1865 that I first witnessed any of the phenomena of what is called Spiritualism, in the house of a friend,— a sceptic, a man of science, and a lawyer, with none but members of his own family present. Sitting at a good-sized round table, with our hands placed upon it, after a short time slight movements would commence — not often "turnings" or "tiltings" but a gentle intermittent movement, like steps, which after a time would bring the table quite across the room. Slight but distinct tapping sounds were also heard. The following notes made at the time were intended to describe exactly what took place:—

"July 22nd, 1865.— Sat with my friend, his wife, and two daughters at a large loo table, by daylight. In about half an hour some faint motions were perceived, and some faint taps heard. They gradually increased; the taps became very distinct, and the table moved considerably, obliging us all to shift our chairs. Then a curious vibratory motion of the table commenced, almost like the shivering of a living animal. I could feel it up to my elbows. These phenomena were variously repeated for two hours. On trying afterwards, we found the table could not be voluntarily moved in the same manner without a great exertion of force, and we could discover no possible way of producing the taps while our hands were upon the table."

On other occasions we tried the experiment of each person in succession leaving the table, and found that the phenomena continued the same as before, both taps and the table movement. Once I requested one after another to leave the table. The phenomena continued, but, as the number of sitters diminished, with decreasing vigor, and, just after the last person had drawn back, leaving me alone at the table,

* On Miracles and Modern Spiritualism, London, 1875, French translation, Paris, 1889 (the English word *spiritualism* is always used here in the sense of *spiritism*).

there were two dull taps or blows, as with a fist on the pillar or foot of the table, the vibration of which I could feel as well as hear.

Some time before these observations I had met a gentleman who had told me of most wonderful phenomena occurring in his own family,— among them the palpable motion of solid bodies when no person was touching them or near them; and he had recommended me to go to a public medium in London (Mrs. Marshall), where I might see things equally wonderful. Accordingly, in September, 1865, I began a series of visits to Mrs. Marshall, generally accompanied by a friend,— a good chemist and mechanic, and of a thoroughly sceptical mind.

1. A small table, on which the hands of four persons were placed (including my own and Mrs. Marshall's), rose up vertically about a foot from the floor, and remained suspended for about twenty seconds, while my friend, who was sitting looking on, could see the lower part of the table with the feet freely suspended above the floor.

2. While sitting at a large table, with Miss T. on my left and Mr. R. on my right, a guitar which had been played in Miss T's hand slid down onto the floor, passed over my feet, and came to Mr. R., against whose legs it raised itself up till it appeared above the table. I and Mr. R. were watching it carefully the whole time, and it behaved as if alive itself, or rather as if a small invisible child were by great exertions moving it and raising it up. These two phenomena were witnessed in bright gaslight.

3. A chair, on which a relation of Mr. R.'s sat, was lifted up with her on it. Afterwards, when she returned to the table from the piano, where she had been playing, her chair moved away just as she was going to sit down. On drawing it up, it moved away again. After this had happened three times, it became apparently fixed to the floor, so that she could not raise it. Mr. R. then took hold of it, and found that it was only by a great exertion he could lift it off the floor. This sitting took place in broad daylight, on a bright day, and in a room on the first floor with two windows.

However strange and unreal these few phenomena may seem to readers who have seen nothing of the kind, I posi-

tively affirm that they are facts which really happened just as I have narrated them, and that there was no room for any possible trick or deception. In each case, before we began, we turned up the tables and chairs, and saw that they were ordinary pieces of furniture, and that there was no connection between them and the flooor, and we placed them where we pleased before we sat down. Several of the phenomena occurred entirely under our own hands, and quite disconnected from the "medium." They were as much realities as the motion of nails towards a magnet, and, it may be added, not in themselves more improbable or more incomprehensible.

The mental phenomena which most frequently occur are the spelling out of the names of relatives of persons present, their ages, or any other particulars about them. They are especially uncertain in their manifestation, though when they do succeed they are very conclusive to the persons who witness them. The general opinion of sceptics as to these phenomena is, that they depend simply on the acuteness and talent of the medium in hitting on the letters which form the name, by the manner in which persons dwell upon or hurry over them,— the ordinary mode of receiving these communications being for the person interested to go over a printed alphabet, letter by letter, loud taps indicating the letters which form the required names. I am going to choose some of our experiments which show how impossible it is to accept this explanation.

When I first received a communication myself I was particularly careful to avoid giving any indication, by going with steady regularity over the letters; yet there was spelt out correctly, first, the place where my brother died, Para; then his Christian name, Herbert; and lastly, at my request, the name of the mutual friend who last saw him, Henry Walter Bates. On this occasion our party of six visited Mrs. Marshall for the first time, and my name as well as those of the rest of the party, except one, were unknown to her. That one was my married sister, whose name was no clue to mine.

On the same occasion a young lady, a connection of Mr. R.'s was told that a communication was to be made to her.

She took the alphabet, and instead of pointing to the letters one by one, she moved the pencil smoothly over the lines with the greatest steadiness. I watched her, and wrote down the letters which the taps indicated. The name produced was an extraordinary one, the letters being Thomas Doe Thacker. I thought there must be an error in the latter part; but the names were Thomas Doe Thacker, the lady's father, every letter being correct. A number of other names, places, and dates were spelt out on this occasion with equal accuracy; but I give only these two, because in these I am *sure* no clue was given by which the names could have been guessed by the most preternaturally acute intellect.

On another occasion, I accompanied my sister and a lady who had never been there before to Mrs. Marshall's, and we had a very curious illustration of the absurdity of imputing the spelling of names to the receiver's hesitation and the medium's acuteness. She wished the name of a particular deceased relative to be spelled out to her, and pointed to the letters of the alphabet in the usual way, while I wrote down those indicated. The first three letters were y r n. "Oh!" said she, "that's nonsense; we had better begin again." Just then an e came, and, thinking I saw what it was, I said, "Please go on, I understand it." The whole was then spelt out thus: yrnehkcocffej. The lady even then did not see it, till I separated it thus: yrneh kcocffej, or Henry Jeffcock,—the name of the relative she had wanted, accurately spelt backwards.

Another phenomenon, necessitating the exertion both of force and intellect, is the following: The table having been previously examined, a sheet of note paper was marked privately by me, and placed with a lead-pencil under the centre foot of the table, all present having their hands upon the table. After a few minutes, taps are heard, and, on taking up the paper, I find written on it, in a free hand, "William." On another occasion, a friend from the country — a total stranger to the medium, and whose name was never mentioned — accompanied me; and, after receiving what purported to be a communication from his son, a paper was put under the table, and in a few minutes there was found written on it "Charley T. Dodd." the correct name.

In these cases it is certain there was no machinery under the table; and it simply remains to ask if it were possible for Mrs. Marshall to slip off her boots, seize the pencil and paper with her toes, and write on it a name she had to guess at, and again put on her boots without removing her hands from the table, or giving any indication whatever of her exertions.

It was in November, 1866, that my sister discovered that a lady living with her had the power of inducing loud and distinct taps and other curious phenomena; and I now began a series of observations in my own house, the most important of which I shall briefly narrate.

When we sat at a large loo table without a cloth, with all our hands upon it, the taps would generally commence in a few minutes. They sound as if made on the under side of the leaf of the table, in various parts of it. They change in tone and loudness, from a sound like that produced by tapping with a needle or a long finger-nail, to others like blows with a fist or slaps with the fingers of a hand. Sounds are produced also like scraping with a finger-nail, or like the rubbing of a damp finger pressed very hard on the table. The rapidity with which these sounds are produced and are changed is very remarkable. They will imitate, more or less exactly, sounds which we make with our fingers above the table; they will keep good time to a tune whistled by one of the party; they will sometimes, at request, play a very fair tune themselves, or will follow accurately a hand tapping a tune upon the table.

Of course, the first impression is that some one's foot is lifting up the table. To answer this objection, I prepared the table before our second trial without telling any one, by stretching some thin tissue paper between the feet an inch or two from the bottom of the pillar, in such a manner that any attempt to insert the foot must crush or tear the paper. The table rose up as before, resisted pressure downwards, as if it was resting on the back of some animal, sunk to the floor, and in a short time rose again, and then dropped suddenly down. I now with some anxiety turned up the table, and, to the surprise of all present, showed them the delicate tissue stretched across altogether uninjured! Find-

ing that this test was troublesome, as the paper or threads had to be renewed every time, and were liable to be broken accidentally before the experiment began, I constructed a cylinder of hoops and laths, covered with canvas. The table was placed within this as in a well, and, as it was about eighteen inches high, it kept the feet and dresses of the ladies away from the table. The latter rose without the least difficulty, the hands of all the group being held above it.

A small centre-table suddenly moved up of its own accord to the table by the side of the medium, as if it had gradually got within the sphere of a strong attractive force. Afterwards, at our request, it was thrown down on the floor without any person touching it, and it then moved about in a strange life-like manner, as if seeking some means of getting up again, turning its claws first on one side and then on the other. On another occasion, a very large leather arm-chair which stood at least four or five feet from the medium, suddenly wheeled up to her, after a few slight preliminary movements. It is, of course, easy to say that what I relate is impossible. I maintain that it is accurately true; and that no man, whatever be his attainments, has such an exhaustive knowledge of the powers of nature as to justify him in using the word "impossible" with regard to facts which I and many others have repeatedly witnessed.

We evidently have here facts similar to those which I observed in my experiments with Eusapia and with other mediums.

Alfred Russel Wallace continues his account by the citation of cases analogous to those which have been described in this work; then sums up the experiments of Crookes, of Varley, Morgan, and other English scientists; does me the honor of citing my letter to the Dialectical Society which I have printed above; passes in review the history of Spiritualism, and declares that (1) *the facts are incontestable,* and that (2), in his opinion, the best explanatory hypothesis is that of *spirits,* or *the souls of the disembodied* — the theory of "the unconscious" being *evidently inadequate.*

Such is also the opinion of the electrician Cromwell Varley. Neither he nor Wallace believes that there is anything supernatural in the phenomena. Discarnate spirits are in nature, as well as the incarnate. "The triviality of the communications ought not to astonish us, if we consider the myriads of trivial and fantastic human beings who every day become ghosts and are the same beings the day after their death that they were the day before."

Professor Morgan, the brilliant author of the *Budget of Paradoxes* (an excellent piece of work, and highly complimented by the London *Athenæum,* in 1865), expresses the same opinion in his work on *Mind* (1863). Not only does he think that the facts are incontestable, but he also believes that the hypothesis that explains the facts by intelligences exterior to ourselves is the only satisfying one. He relates, among other things, that, in one of the séances attended by him, a friend of his (a very sceptical person), was making a little fun of the spirits, whereupon, while they were all standing (a dozen experimenters of them) around the dining room table, and forming the chain above it, *without contact,* the heavy table began to move of its own accord, and, dragging along the whole group, made a rush at the sceptic, and pinned him against the back of the sofa, until he cried "Hold! enough!"

Still, does that constitute proof of an independent spirit? Was it not an expression of the collective thought of the company? And, likewise, in the experience which Wallace has just cited, were not the dictated names latent in the brain of the questioner? And was not the little centre-table, in its climbings acting under the physical and pyschical influences of the medium?

Whatever may be the explanatory hypothesis, the FACTS are undeniable.

We have here, before all, a group of substantial English

scientists of the first rank, in whose opinion the denial of the phenomena is a sort of madness.

French scientists are a little more belated than their neighbors. Nevertheless, I have already called attention to some of them during the course of this work. I should have taken pleasure in adding the names of the lamented Pierre Curie and of Professor d' Arsonval, if they had published the experiments they made with Eusapia during July, 1905, and March and April, 1906, at the General Institute of Psychology.

Among the most judicious of experimentors in psychical phenomena I ought also to mention M. J. Maxwell, a doctor of medicine and (a very different function) advocate-general at the Court of Appeals in Bordeaux.

The reader may have already noticed (p. 173) the part which this investigator, at once a magistrate and a scientist, took in the experiments made at l' Agnélas in 1895. Eusapia is not the only medium with whom he studied, and his acquaintance with our subject is supported by the best of documentary evidence.

It is fitting that I present to the reader at this point the most characteristic facts and the essential conclusions set forth in his work.*

The author has made a special examinations of *raps.*

Raps (*coups frappés*).— The contact of hands is not necessary to obtain raps. With certain mediums I have very readily obtained them without contact.

When one has succeeded in obtaining raps with contact, one of the surest means of continuing to thus obtain them, is to keep the hands resting on the table for a certain time, then to lift them *very slowly,* keeping the palms turned downward toward the table, the fingers loosely opened, but not held stiffly. It rarely happens under such circum-

* *Les Phénomènes psychiques.* One vol. 8vo. Paris, 1903.

stances, that the raps do not continue to make themselves heard, at least for some time. I need not add that the experimenters should not only avoid touching the table with their hands, but even with any other part of their bodies, or their clothes. The contact of garments with the table may be sufficient to produce raps which have in them nothing supernormal. It is necessary therefore to exercise great care that the dresses of ladies do not come in contact with the legs of the table. When the necessary precautions are used, the raps sound in a very convincing way.

In the case of certain mediums, the energy set free is powerful enough to act at a distance. I once happened to hear raps upon a table which was almost six feet from the medium. We had had a very short sitting and had left the table. I was reclining in an easy-chair; the medium, standing, was conversing with me, when a series of raps was made upon the table which we had just left. It was broad daylight in midsummer, about five o'clock in the evening. The raps were forcible and lasted for several minutes.

I have often observed facts of this kind. I happened once, while travelling, to meet an interesting medium. He did not allow me to use his name, but I may say that he is an honorable man, well informed, occupying an official position. I obtained with him lively raps in restaurants and in railway lunch counters. He did not suspect that he possessed this latent faculty before he had experimented with me. To have observed the raps produced under these conditions would have been sufficient to convince anyone of their authenticity. The unusual noise made by these raps attracted the attention of persons present and gave us much annoyance. The result surpassed our expectations. It is to be noted that the more we were confused with the noise made by our raps, the more frequent they became. One would have said that some waggish creature was producing them and amusing himself with our embarrassment.

I also obtained fine raps upon the floors of museums before the pictures of the old masters. The most common are those made, with contact, upon the table or upon the floor;

next, those made at a distance upon various articles of furniture.

More rarely, I have heard them on the garments of the sitters or of the medium, or upon the coverings of pieces of furniture. I have heard them on sheets of paper laid on the experiment-table, in books, in walls, in tambourines, in small wooden objects, especially in a planchette used for automatic writing. I noticed very curious raps in the case of a writing-medium. When she had automatic writing, the raps were produced with extreme rapidity at the end of her pencil; but, the pencil itself did not tap the table. Several times and very carefully I put my hand on the end of the pencil opposite the point, without the latter leaving for a single moment the paper on the table: the raps sounded in the wood, not on the paper. In this case, of course, the medium held the pencil.

The raps occur even when I place my finger on the upper end of the pencil and when I press its point against the paper. You feel the pencil vibrating, but it is not displaced. Inasmuch as these raps are very resonant, I calculated that it would be necessary to give a pretty strong blow in order to produce them artificially. The necessary movement requires a lifting of the point from two to five millimeters, according to the intensity of the raps. Now the point does not seem to be displaced. Furthermore, when the writing is going on, these raps take place with great rapidity, and the examination of the writing does not show any place where a stop occurred. The text is continuous, no trace of tapping is perceptible in it, no thickening of the strokes can be perceived. Observations made under such conditions seem to me to exclude the possibility of fraud.

I have observed that these raps occur, without apparent cause, as far as nine feet from the medium. They manifest themselves as the expression of an activity and of a will distinct from those of the observers. Such is the *appearance* of the phenomenon. A curious fact results from all this, that not only do the raps occur as the product of an intelligent action, but they also usually agree to perform as often as asked, and to produce definite rhythms, for example,

certain airs. In like manner they imitate the raps made by the experimenters, upon demand of the latter.

The different raps frequently respond to each other, and it is one of the prettiest experiments in which one can take part to hear these blows, now slight and muffled, now sharp and abrupt, or again soft and gentle, sounding simultaneously upon the table, the floor, and the frame-work and coverings of the furniture.

I had the good fortune to be able to study these curious rappings at close range, and I believe I have reached certain conclusions. The first, and the best attested, is that the raps are closely connected with the muscular movements of the sitters. I will sum up my observations on this point as follows:

1. Every muscular movement, even a feeble one, is generally followed by a rap.

2. The intensity of the raps did not seem to me to be proportional to the muscular movement made.

3. The intensity of the raps did not seem to me to vary in proportion to their distance from the medium.

The following are the facts upon which my conclusions rest:

I frequently observed that when we had raps that were feeble and occurred only at intervals, an excellent means of producing them was to form the chain upon the table, the hands resting upon it, and the observers putting their fingers in light contact. One of them, without breaking the chain (a feat he accomplished by holding in the same hand the right hand of his neighbor on the left and the left hand of his neighbor on the right) moved his released hand in circular sweeps or passes over the table, at the level of the circle formed by the opened hands of the observers. After having made this movement four or five times, always in the same direction,— that is to say, after having thus traced four or five circles over the table, the experimenter brought his hand over toward the centre at a variable height and moved it down towards the table. Then he abruptly arrested this movement at a distance of seven or eight inches from the top. The abrupt stoppage of his hand was tallied by a rap in the wood. It is an exceptional case when this

process does not yield taps,— that is to say, when there is a medium in the circle capable, even feebly, of producing them.

The same experiment can be made without touching the table, but forming around it a kind of closed chain. One of the operators then acts as in the preceding case.

I have no need to recall to the minds of my readers that with certain mediums, raps are produced without any movement being made. Almost all mediums can obtain them in this way by keeping perfectly quiet and having patience. But one would say that the execution of the movement acts as a determining cause. It seems as if the accumulated energy received a kind of stimulus.

Levitations.— One day we improvised an experiment in the afternoon, and I remember that I observed a very interesting levitation made under these circumstances. It was about five o'clock in the evening (at any rate it was broad daylight), in the salon at l'Agnélas. We took our places about the table, *standing*. Eusapia took the hand of one of us and placed it on the corner of the table, at her right. The table thereupon rose up to the height of our foreheads; that is to say, the top of the table rose at least as high as five feet above the floor.

Such experiments were very convincing, for it was impossible for Eusapia, the circumstances being such as they were, to lift the table by a normal act. It is enough to suppose that she merely touched the corner of the table, to find out how heavy a weight she would have had to lift if she had made a muscular movement. Besides, she had not a sufficient grip on the table to lift it. Evidently, the conditions of the experiment being such, she could not make use of one of the fraudulent processes mentioned by her critics, such as straps or hooks of any kind. The phenomenon is undeniably authentic.

The breathing seems to have a very great influence. In the way things take place, it seems as if the sitters released, by breathing, an amount of motor energy comparable to that which they release when rapidly moving their limbs. There is something in this very curious and difficult to explain.

The more complete analysis of the facts allows us to think

that the liberation of the energy employed depends upon the contraction of the muscles and not upon the movement made. The thing which reveals this peculiarity is easy to observe. When we are forming the chain about the table, we can set up a movement without contact by mutually pressing our hands together with a certain force, or by pressing the feet hard upon the floor. The first of these means is much the better of the two. The arms have only made an insignificant movement, and one can say that the muscular contraction is almost the only physiological phenomenon observable. Yet it suffices.

All these authenticated experiments tend to show that the agent which determines movements without contact has some connection with our organism, and probably with our nervous system.

Conditions of the Experiments.— We must never lose out of our sight the relative importance of the moral and intellectual status of the group of experimenters. That is one of the most difficult things to seize and comprehend. But when the force is abundant, the simple manifestation of the will is sometimes able to determine the movement. For example, upon a desire to that affect being expressed by the sitters, the table moves in the way it is requested to do. The phenomena occur as if this force were guided by an Intelligence distinct from that of the experimenters. I hasten to say that I regard that only as a probability, and that I think I have observed a certain resemblance between these personifications and the secondary personalities of somnambulists.

In this apparent bond between the *indirect* will of the sitters and the phenomena there is a problem the solution of which has so far completely escaped me. I suspect that this bond has nothing supernatural about it and I realize that the Spiritualistic hypothesis is a poorer explanation and inadequate to meet the facts; but I cannot formulate any satisfactory explanation.

Close observations of the relations existing between the phenomena and the will of the sitters brings out other discoveries also. I mean, in the first place, the bad affect which disagreement among the experimenters produces. It some-

thaumaturgist. The religious prejudice which proscribes these experiments as supernatural is as little justified as the scientific prejudice which only sees in them fraud and imposture. Here again the old adage of Aristotle finds its application: Equity lies between the two extremes of opinion.

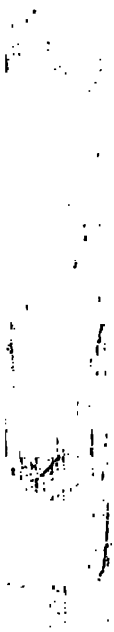
It is evident that these experiments of Dr. Maxwell are in accord with all the preceding ones. The results ascertained mutually confirm each other.

Apropos of mediums who produce physical or material effects, I should also like to mention here the one who was very specially examined at Paris, in 1902, by a group of men composed in large part of former pupils of the Polytechnic School. They held a dozen séances in July and August. This group was composed of MM. A. de Rochas, Taton, Lemerle, Baclé, de Fontenay, and Dariex. The medium was Auguste Politi, of Rome. He was forty-seven years old.

Several very remarkable table-levitations were observed and photographed by these gentlemen during their sittings. I reproduce here (Pl. XIII) one of these photographs, taken by M. de Fontenay which he kindly allows me to use. It is undoubtedly one of the most beautiful that has been obtained, and one of the most striking. All the hands that form the chain are carefully held away from the table. It seems to me that not to recognize the value of this photograph as a record would be to deny the evidence itself. It was taken instantaneously by a flash of magnesium light. The eyes of the medium had been bandaged, that the light might not give him a nervous shock.

This same medium was studied at Rome, in February, 1904, by a group composed of Professor Milési, of the University of Rome, M. Joseph Squanquarillo, Mr. and Mrs. Franklin Simmons (American travellers passing through Rome), and M. and Mme. Cartoni.

PLATE XIII. INSTANTANEOUS PHOTOGRAPH TAKEN BY M. DE FONTENAY OF TABLE LEVITATION PRODUCED BY THE MEDIUM AUGUSTE POLITI.



They declare that they heard scales very well executed upon the piano (which was an upright one), at quite a distance from the sitters; yet none of the sitters knew how to play on the piano, while Professor Milési's deceased sister, who was called upon to manifest herself, was a very good pianist.

Another musical phenomenon was produced: A mandolin placed on the lid of the piano, began of its own accord to play, balancing itself in the air until it went and fell down (playing all the while) between the hands of the experimenters who formed the chain.

Later, at intervals, the piano was lifted in its turn, falling back noisily. It must be remarked that two men scarcely sufficed to lift this piano, even by one of its sides. After the sitting, it was ascertained that the instrument had been displaced about a foot and a half.

But here follows a résumé of the phenomena observed with this medium.

In every séance, very vigorous raps were obtained in the table around which were grouped the experimenters and the medium (they together forming the chain), while the lamp with red light was on the table itself. "If we wished to produce raps so sharp and strong (says M. C. Caccia, the reporter of these séances), we had to rap with all our might on the table with some solid object, while the kind of raps which were produced in the séances with Politi seemed to issue from the interior of the table with loud sounds like explosions."

But now the table begins to be shaken. The white curtain of the cabinet which was behind the medium, at a distance of twenty inches, swelled out and floated in every direction, as if a violent wind had inflated it from the other side. We heard a chair moving with a gliding motion over the floor. It had been placed there before the beginning of the sitting and was now thrown violently over. During the course of the fifth sitting it came clear out of the cabinet, in the

presence of everybody, and did not stop until it got near the medium.

These phenomena took place by the red light of a photographic lamp. In the complete darkness which attended the third séance an extraordinary thing occurred,— so much the more extraordinary because we had taken special measures to forestall any attempt at fraud. The medium was held by two sitters who, being very sceptical, had taken their places on his right and on his left, and were holding his hands and his feet.

At a certain moment the medium ordered the operators to lift their hands from the table and not to hinder its movements; above all, not to break the chain. Whereupon a great uproar was heard in the cabinet. The medium calls for light, and, to the great amazement of all of us, we discover that the table, which was rectangular in form and did not weigh less than thirty-nine pounds, was found turned upside down upon the floor of the cabinet. The controllers declared that the medium had not stirred. It is to be remarked:

1. That the table must have been lifted high enough to pass over the heads of the sitters.

2. That it must have passed above the group forming the chain.

3. That as the opening in the curtains of the cabinet only measured thirty-seven inches across, and the table, on its shortest side, thirty inches, there only remained free seven inches for passing through this opening.

4. That the table must have come forward endwise, then moved around lengthwise (it was three feet long), and turned upside down, resting on the floor; that the whole of this difficult manœuvre was executed in a few seconds in complete darkness and without any of the sitters having touched the table in the slightest degree.*

* The Italian journals reproduced a picturesque photograph of the table lifted almost to the height of the ceiling, at the moment it had passed over the heads of the sitters and was turning over (see A. de Rochas, *Extériorisation de la motricité*, 4th ed.). I do not reproduce it, because it does not seem to me to be authentic. Besides, the observers declared that they did not verify this phenomenon until *after* its pro-

Luminous phenomena were also obtained. Lights appeared and disappeared in the air. Some of them gave the outline of a curve. They did not show any radiation. In the fifth séance, everybody was able to testify to the appearance of two luminous crosses, about four inches in height.

At the last séance, the tambourine fringed with bells, which had been rubbed with phosphorous, went circling around the whole room, and in such a way that all its movements could be followed.

During almost all the sittings, mysterious touchings were noticed,— among others, those produced by an enormous hairy hand!

In the first, fourth and fifth séances there were "materializations. Prof. Italo Palmarini believed that he recognized his daughter, who had been dead three years. He felt himself embraced; everybody heard the sound of a kiss. The same manifestation took place in the fifth séance. Professor Palmarini believed that he still recognized the person of his daughter.

At the opening of each séance the medium was searched, and was then placed *in a kind of big sack,* made to order for this purpose, *and fastened at the neck, the wrists, and the feet.*

Another medium, the Russian Sambor, was the object of numerous experiments at St. Petersburg during a period of six years. (1897–1902.) It will be interesting also to give a summing up in this place of the report about this man published by M. Petrovo Solovovo.*

In the first séances a large folding screen placed behind the medium was observed to be vigorously shaken. The medium's feet and hands were carefully held. A table in a neighboring chamber moved of its own accord. In a metal cone placed on the table, enclosing a bit of paper and a lead-pencil, and then riveted up, there was found, when it was unriveted, a ribbon, and a phrase written on the paper

* *Annales des Sciences psychique,* 1902.

in script that had to be read in a looking-glass (*écriture en miroir*). Other cases of the passage of matter through matter were tried, none of which succeeded. But further on the reports relate the following experiments:

In the month of February, 1901, one of Sambor's séances took place at my house, in my study, against the windows of which I had hung curtains of black calico in such a way that the room was plunged in the deepest darkness. The medium occupied a place in the chain. Next to the medium were M. J. Lomatzsch, on his right, myself on his left. Sambor's hands and feet were faithfully held the whole time in a way that gave perfect satisfaction.

The phenomena soon began to develop. I do not intend to take the time here to describe them, but I wish to mention a remarkable case of the passage of matter through matter.

M. Lomatzsch, controller on the right, declares that someone is pulling his chair from under him. So, redoubling our attention, we continue to hold the medium. M. Lomatzsch's chair is soon positively lifted up, so that he is obliged to stand. Sometime after, he declares that someone is trying to hang the chair on the hand with which he is holding Sambor. Then the chair suddenly disappears from the arm of M. Lomatzsch, and at the same moment I feel a light pressure upon my left arm (I do not mean the one which was in contact with the medium, but with my neighbor on the left (M. A. Weber); after which I feel that something heavy is hanging from my arm. When the candle was lighted, we all saw that *my left arm had been passed through the back of the chair.* In this way the chair was nicely balanced upon that one of my arms which was not in contact with Sambor, but with my neighbor on the left. I had not let go of the hands of my neighbors.

Such an observation as this needs no commentary (says the reporter of this occurrence, M. Petrovo Solovovo). The fact is simply incomprehensible. I give here some other phenomena which were observed in May, 1902:

1. A cedar apple, an old copper coin which was found to be a Persian coin of 1723, and an amateur photographic portrait of a young woman in mourning unknown to anybody present were found (coming from nobody knew where, nor in what way), upon the table about which we were seated.

2. Several different objects in the room were transported to the table by the mysterious force; such, for example, as a thermometer, which had been hung on the wall behind the piano at a distance of from one-half to seven feet from the medium; a large lantern placed upon the piano somewhere between two and four feet behind the medium; several piles of music-books which had rested on the same piano; a framed portrait; and, finally, the candlesconce, the candle, and the different parts of a candlestick belonging to the piano.

3. Several times a bronze bell placed on the table was lifted into the air by the mysterious force and noisily rung. On the request of the sitters it was once carried over to the piano (against which it struck a sounding blow), and from there again over to the table.

4. Unoccupied chairs had been placed behind the medium. One of them was several times lifted and placed noisily on the table in the midst of the sitters, and without having run against any of them. When upon the table, this chair several times moved about, fell over, and picked itself up.

5. One of these same chairs was found to be hung by the back upon the joined hands of the medium and M. de Poggenpohl. Before the beginning of that part of the séance which witnessed this phenomenon, a strip of cloth, slipped over the sleeves of the medium, had been several times tightly twisted around the wrists of M. de Poggenpohl.

6. At the request of the sitters, the mysterious force several times stopped the playing of the music-box (it stood on the table around which we were seated), after which it began to play again.

7. A sheet of paper and a lead pencil, placed on the table, were thrown on the floor, and everybody distinctly heard the pencil moving over the paper with a heavy pressure and, with a sharp tap, putting a period at the end of what had

been written. After this the pencil was laid on the table.

8. Five of the experimenters declared that they had been touched by some mysterious hand.

9. Twice the mysterious force drew sounds from the piano. The first time, this took place when the lid of the piano was open. The second time, the sounds were heard after the lid had been *locked with a key*, the key remaining on the table in the midst of the circle of experimenters. At first the unknown force began to play a melody on the high notes, and two or three times produced trills. Then chords on the bass notes were heard at the same time with the melody, and, when the piano was playing, the music-box also began to play, both performances lasting several minutes.

10. During all the phenomena which have just been described, the medium (Sambor), seemed sunk in a profound trance, and remained almost motionless. The phenomena were not accompanied by any bustle or confusion. His hands and his feet were all the time controlled by his neighbors. M. de Poggenpohl and Loris-Melikow several times saw something long, black, and slender detaching itself from him during the phenomena and moving toward the objects.

I will add, in closing (says M. Petrovo Solovovo), that this medium was accused of cupidity and intemperance. These séances were the last he gave (he died a few months afterward). But, to tell the truth, I have a tender spot in my heart for the late M. Sambor. This Little-Russian, a former telegraph operator, polished and humanized by the six or seven winters that he had passed in St. Petersburg — can it be that blind Nature had chosen this man to be the intermediary between our world and the doubtful Beyond? — or, at least, another world of beings whose precise nature (begging the pardon of the spirits) would be an enigma to me, provided I positively believed in them.

It is with that word "doubt" (alas! is not *doubt* the most *certain* result of mediumistic experiments?) that I end this Report.

To this whole series of varied observations and experiments we could still add many more. In 1905 MM. Charles

Richet and Gabriel Delanne held some famous séances in Algiers. But is not impossible that fraud may have crept into their experiments, in spite of all the precautions taken by them. (The photographs of the phantom Bien-Boa have an artificial look.) In 1906, the American medium, Miller, gave in Paris several séances in which it really seems as if true apparitions were manifested. I cannot say anything personally about it, not having been present. Among other experimenters, there were two very competent ones, who studied this medium; namely, MM. G. Delanne and G. Méry. The first concludes that the apparitions were what they represented themselves to be (see *Revue scientifique et morale du spiritisme*); that is to say, the spirits of the departed. The second, on the other hand, declares in *L'Echo du Merveilleux,* that, "until there is fuller information, we must be satisfied with not comprehending."

It is not within the scope of my plan to discuss in this particular place, "apparitions" or "materializations." We may ask ourselves whether the fluid which certainly emanates from the medium may not produce a kind of condensation able to furnish to the most interested observer of the manifestation the elusive vision of an unreal personality which, besides, only lasts, as a general thing, for a few seconds. Is it a mélange or combination of fluids? But it is not yet time to make hypotheses.

CHAPTER XI

MY GENERAL INQUIRY RESPECTING OBSERVATIONS OF UNEXPLAINED PHENOMENA

A certain number of my readers perhaps remember the general inquiry that I instituted in the course of the year 1899 respecting observation of the unexplained phenomena of telepathy, manifestations of the dying, premonitory dreams, etc.— an inquiry published in part in my work *L'Inconnu et les problèmes psychiques*. I received 4280 replies composed of 2456 *no* and 1824 *yes*. Among the latter there are 1758 letters with more or less of detail. A large number of these were not presented in such a shape that their claims could be discussed. But I was able to use 786 of the most important of them. They were classified, the essential matters transcribed, and summed up in the work of which I have just spoken. The most striking thing in all these accounts is the loyalty, conscientiousness, the frankness, and the sensitive refinement of the narrators, who are anxiously concerned to say only what they know, and as they know it, without adding or subtracting anything. In doing this, each becomes the servant of truth.

These 786 letters, transcribed, classified, and numbered, contained 1130 different facts or observations. My examination of the instances recorded in the letters reveals several kinds of subjects which may be classified as follows:

Manifestations and Apparitions of the Dying.
Manifestations of the Living (in Health).
Manifestations and Apparitions of the Dead.
Clairvoyance.
Premonitory Dreams. Forecast of the Future.

Dreams that give Information of the Dead.
Meetings foreseen by Presentiment.
Presentiments realized.
Doubles of the Living.
Communications of Thought at a Distance (Telepathy).
Instinctive Presentiments of Animals.
Calls heard at Great Distances.
Movements of Objects without Apparent Cause.
Bolted Doors Opening of Themselves.
Haunted Houses.
Spiritualistic Experiments.

Since my first publication of these documents, I have received many new ones. More than one thousand are to-day crowded into my manuscript library. They contain about fifteen hundred observations which seem to me to be sincere and authentic. The doubtful ones have been eliminated. These narratives emanate as a general thing from persons who are filled with astonishment and are extremely desirous of receiving, if possible, an explanation of these strange events (often very affecting). All the narratives which I have been able to verify have been found to be fundamentally accurate — sometimes modified afterwards, as respects their mere form, by a memory more or less confused.

In *L'Inconnu,* I published a portion of these narratives. But I excluded from that work * phenomena not properly included within the limits of its main plan, which was to show the existence of unknown faculties of the soul.

I excluded, I say, " movements of objects without apparent cause," " bolted doors opening of themselves," " haunted houses," " Spiritualistic experiments;" that is to say, the very cases studied in the present work, in which I hoped to

* Several observations published in that work are however, connected in subject with the present one. For instance: a piano playing alone (p. 108), a door opening of itself (p. 112), curtains shaken (p. 125), extravagant gambols of pieces of furniture (p. 133), raps (p. 146), bells ringing (p. 168), and numerous examples of unexplained disturbing noises coinciding with deaths.

be able to publish them. But space fails me. In my desire to offer to my readers a set of records as complete as possible, for the purpose of giving them a firmly based opinion, I have been swamped by the abundance of material, and, can only rescue a few of the most interesting specimens of them for presentation here.

First of all, I select the following communication as having a certain intrinsic value. It was sent me by my regretted friend Victorin Joncières, the well-known composer of music.

I was on a tour of inspection of the music-schools of the Provinces (he says), and happened to be in a city which I cannot name to you for the reasons which I gave. I was coming out of the branch establishment of our Conservatory, after having examined the piano-class there, when I was addressed by a lady who asked me what I thought of her daughter, and whether I judged that she ought to enter upon an artistic career.

After a rather long conversation, in the course of which I promised to go to hear the young artist, I found myself engaged to go the same evening (for I was leaving the next day) to the house of one of their friends, a high official in the state service, to take part in a Spiritualistic séance.

The master of the house received me with extreme cordialty, recalling the promise I had given him to keep secret his name and that of the city in which he lived. He presented his niece, *the medium,* to whom he attributes the phenomena which take place in his house. It was, in fact, after the young girl's mother had died, and she came to live with him, that the strange occurrences began to take place.

They began with unusual noises in the walls, and in the floors, with the displacement of articles of furniture that moved without being touched, and with the warblings of birds. M. X. at first believed that it was a piece of foolery planned either by one of his own family or by one of his clerks. However, in spite of the most vigilant watching, he could not discover any trickery, and he finally came to the

conclusion that the phenomena were produced by invisible agents, with whom he believed he could communicate. He soon obtained raps, direct writing, the mysterious appearance of flowers, etc.

After this account, he led me into a large room with bare walls, in which several persons had assembled, among whom were his wife and a professor of natural philosophy at the lyceum — altogether, a dozen of experimenters. In the middle of the room there was a big oak table, upon which were placed paper, a pencil, a small harmonica, a bell, and a lighted lamp.

"The spirit announced to me a little while ago that he would come at ten o'clock," said the gentleman to me. "We have a good hour before us. I am going to utilize it by reading to you the minutes of our meetings for a year past." He laid on the table his watch, which showed five minutes to nine, and covered it with a handkerchief.

For a whole hour he applied himself to reading what seemed to be very improbable stories; but I was longing to see some of the wonders.

Suddenly a loud cracking sound was heard in the table. M. X. lifted the handkerchief which covered the watch. It was just ten o'clock.

"Art thou there, spirit?" said he.

Nobody was touching the table; and on his recommendation, we formed the chain about it, holding each other by the hand.

A vigorous rap was heard.

The young niece placed her two fingers against the edge of the table and asked us to imitate her. Thereupon this extremely heavy table rose up well *above our heads,* in such a way that we were obliged to stand on tip-toe in order to follow it in its ascent. It hung poised for some moments in the air and then slowly descended to the floor and came to a stop without noise.

Then M. X. went to look up a large design for a church window. He put it on the table and placed beside it a glass of water, a box of colors, and a camel's hair brush. Then he put the lamp out. He lighted it again at the end of two or three minutes: the sketch (still damp) was painted in

two colors, yellow and blue, and not a single brush mark had passed beyond the traced lines of the sketch.

Even if we admit that some one of the sitters might have been able to play the rôle of spirit, how, in the darkness of the room, could he have so handled the brush as to precisely follow the lines of the design? I will add that the door was closely shut, and, that, during the very short space of time in which the performance took place, I heard nothing but the sound of the water splashing in the glass.

Raps were next struck in the table, corresponding to the letters of the alphabet. The spirit announced that he was going to produce a special phenomenon in order to convince me personally.

By his order the light was again extinguished. The harmonica then played a little sprightly *motif*, in six-eight. Scarcely had the last note sounded when M. X. lighted the lamp. Upon a sheet of music-paper which had been placed near the harmonica, the theme was written very correctly in pencil. It would have been impossible for any one of the company, in the complete darkness of the room, to write down these notes upon the ruled staff-lines.

Thirteen freshly cut daisies lay scattered over the table.

"Hello!" says M. X. "these are daisies from the flower-pot at the end of the passageway."

As I said a moment ago, the door of the room where we were met had remained closed, and no one had stirred. We went into the passageway, and, on noticing the stems denuded of their flowers, we could see very plainly that the daisies came from the place indicated.

Scarcely had we entered the room, when the bell on the table rose up to the very ceiling, ringing as it went, but fell abruptly back as soon as it touched it.

On the next day, before my departure, I went to pay a visit to M. X. He received me in his dining-hall. Through the large open window a beautiful June sun flooded the room with its brilliant light.

While we were conversing in a desultory way, a piece of military music rang out in the distance. "If there is a spirit here," said I, smiling, "it ought by rights to accom-

pany the music." At once rhythmic taps, in exact harmony with the double quick time, were heard in the table. The crackle of sounds in it died away little by little in a decrescendo very skilfully timed to the last vanishing blare of the bugles.

"Give us a fine tattoo to finish," said I, when the sounds had completely ceased. The reply was a series of sounds like the heavy roll of drums, given with such force that the table trembled on its legs. I put my hand on it and very plainly felt the vibrations of the wood as it was struck by the invisible force.

I asked if I might inspect the table. It was turned upside down in my presence, and I examined it, as well as the floor, very carefully. I discovered nothing. Besides, M. X. could not, you know, foresee, that, during my visit, a military band would pass by, and that I should ask the table to accompany it by imitating the drum.

I afterwards returned to the city where these things occurred and was present at other very curious séances. I should be enchanted, my dear master and friend, as I have said to you, to be your guide there some day. But this "high functionary" absolutely insists on his incognito.

These remarkable observations by my friend Joncières evidently have their value, and belong here, in the train of all the preceding ones.

I give a few others below which we owe to an attentive and sceptical observer, M. Castex-Dégrange, sub-director of the National School of Fine Arts at Lyons, upon whose veracity and sincerity not the least shadow of suspicion can rest, any more than in the preceding instances. I owe to his kindness a large number of interesting letters, and I will ask his permission to cite from them the most important passages.

The following is dated the 18th of April, 1899.

For the second time, I affirm upon my honor that I will tell you nothing that is not strictly true, and usually easy to verify.

In spite of the calling I follow, I am not at all gifted with imagination. I have lived much in the company of physicians, men from the nature of their profession little even to credulity; and, whether it is in consequence of my natural disposition, or by reason of the principles which I absorbed in this kind of company, I have always been very skeptical.

This is, indeed, one of the reasons why I abandoned my psychical experiments. I reached the most stupifying results, and yet it was impossible for me to get to believe myself. I was thoroughly convinced that I was not seeking to deceive myself or to deceive others, and, not being able to surrender myself to the evidence, I was always seeking some other reason than the one given by the believers. That made me suffer, and I stopped.

I here end this preamble, and am going to unfold to you the course of my observations.

I was acquainted with a company of people, who were occupied with Spiritualism and with turning-tables, and had made them the butt of my wit,* a little; for, although not bitter or severe, I never neglected to play a good practical joke on them when occasion served.

It seemed to me that these worthy people, who were, moreover, very sincere, were all a little "cracked" (*maboules*), if I may be allowed so uncouth, or *fin de siècle,* an expression.

One day I was visiting them. The drawing-room was lighted by two large windows. I began, as usual, by some pleasantries. Their reply was in the shape of an invitation to me to take part in the experiments.

"But," said I, "if I take a seat at your table it will not turn any more, because I shall not push it."

"Come all the same."

Well, I declare upon my honor that, just for a joke, I tried it. I had scarcely put my hands on the table when it made a rush at me.

I said to the person facing me, "Don't push so hard."

* The word used here by M. Castex-Dégrange is *tête de Turc,* a thing like the leather-covered bags in our gymnasiums, and used in fairs in France, to be pummelled by those wishing to try their strength.— *Trans.*

"But, dear sir, I was not pushing."

I put the centre-table back in its place. but the same thing occurred again, once, twice, thrice. I began to get impatient and said,

"What you are doing is not very clever. If you want to convince me, don't push."

He replied to me, "Nobody is pushing, only you probably have so much fluid in you that the table is attracted toward you. *Perhaps you could make it go, by yourself.*"

"Oh, if I myself could make it go, that would be different!"

"Try it."

They all moved back. I remained alone face to face with the table. I took hold of it, lifted it, thoroughly examined it. There was no trick about it. I made every body go behind me. I was facing the windows, and had my eyes open, I assure you. I stretched my arms out as far as possible, in order to have a good view, only placing the ends of my fingers on the table.

In a little less than two minutes it began to rock to and fro. I confess that I felt a little foolish, not wishing to surrender —

"Yes, perhaps it moves," said I. "It is possible that an unknown fluid is acting upon it; at any rate, it does not come toward me, and just now some one was pushing it."

"No," said one of the sitters, "nobody was pushing it; but, although you are highly charged with fluid, the assistance of another person is needed for the production of the phenomenon: you are not enough by yourself. Will you allow one of us to put a hand *upon* yours, without touching the table?"

"Yes."

Someone put a hand on mine and *I watched.* The table at once began to move, and came and pressed against me. They all cried out, and claimed that they had caught a medium in me. I was not very much flattered with the title, which I considered as synonymous with "lunatic."

"You ought to try to write," said some one to me.

"What do you mean by that?"

"Why, see here. You take paper and pen, let your arm

lie passive, and have the wish in your mind that *some unknown person or force* shall cause you to write."

I tried it. At the end of five minutes, my arm felt as if it were wrapped in a woolen blanket. Then, in spite of myself, my hand began to trace at first mere strokes, then *o's, a's,* letters of all sorts, as a schoolboy learning to write would do. Then, all of a sudden, came the notorious word attributed to Cambronne at Waterloo! I assure you, my dear sir, that I am never in the habit of using this coarse and dirty term, and that there was no auto-suggestion, or unconscious act of my own, in the case. I was absolutely *stupefied* by the occurrence.

I continued these experiments at my own home.

1. One day, when I was seated at my writing-desk, I felt the weird seizure in my arm. I let my arm remain passive. The Unknown wrote:

"Your friend Aroud is coming to see you. He is at this moment in such and such an omnibus-office in the suburbs. He is asking the price of tickets and the hour of departure."

(This M. Aroud is chief of the bureau of police, prefecture of the Rhone.) In fact, a half-hour afterwards, Aroud made his appearance. I told him what had taken place.

"It is a good thing for you that you are living in the nineteenth century," said he to me. "A few hundred years ago you would not have escaped death at the stake."

2. On another occasion the phenomenon occurred again, and this time also I was at my writing desk:

"Your friend Dolard is coming to see you."

An hour afterward, sure enough he came. I told him how it happened that I was waiting for him. Although he was very incredulous by nature, yet, for all that, this fact set him to thinking. The next day saw his re-appearance.

"Can you get a reply to a question I am going to ask you?" said he.

"Don't ask," I replied, "think it. We will try."

I must here tell you parenthetically that I had known of Dolard for thirty years. He was my comrade at the Beaux-Arts. I knew that he had lost an elder brother, that he had been married, and had had the misfortune to lose, one

by one, all the members of his family. That was all I knew about them.

I took the pen and the Invisible wrote, "The sufferings of your sister Sophia have just ended."

Now Dolard had mentally asked what had become of the spirit of a sister named Sophia, whom he had lost forty-two years ago, and about whom I had never heard a word spoken.

3. My principal at the School of Fine Arts in Lyons, a former architect of the city of Paris, was M. Hédin. This M. Hédin had an only daughter, who some years ago had married another architect, M. Forget, in Paris. The woman became enceinte.

One day when I was thinking of anything but her, the same thing occurred as before. The Invisible wrote:

"*Mme. Forget is going to die.*"

Mme. Forget was not at all ill, apart from her being in a delicate situation. The next day morning, M. Hédin said to me that his daughter was in her pains; and the same evening he told me that his wife had just set out for Paris to be with her. The next day I received instructions to assume his duties. Mme. Hédin had telegraphed to her husband to come to her. Her daughter was taken with puerperal fever. When the father got there he found only a corpse.

4. I had a cousin named Poncet (since dead) who was formerly an apothecary, at Beaune (Côte-d' Or). I had never been at his apartments. One day he came to Lyons to see our aunt (she who had the vision about which I spoke to you). We conversed about these extraordinary psychical occurrences. He was incredulous.

"Well then," said he, "try to find for me a thing which has no particular market value, but which I laid great store by, because it belonged to my deceased wife. I had a little packet of laces that she was very fond of, and I can't put my hand on it."

The Unknown wrote, "*It is in the middle drawer of the secretary in the chamber, behind a package of visiting cards.*"

My cousin wrote to his servant at Beaune, *without giving her any hint of our experiment,* "Send by post a little packet which you will find in [such a place] behind a package of visiting cards."

The laces arrived by return mail.

You will notice, my dear sir, that, during the experiments, I was by no means asleep or in a state of trance, and that I was conversing in my usual manner.

5. One of my childhood friends, M. Laloge, at the present time a dealer in coffees and chocolates at Saint-Etienne (Loire), had had as his professor, as well as I, an excellent man whom we most highly esteemed, and who was named Thollon.*

M. Thollon, after having directed the education of the children of the Prince of Oldenburg, uncle of the present emperor of Russia, had returned to France and entered the Nice Observatory.

We had the misfortune to lose him shortly after. Laloge had a photograph of him but had lost it. He came and begged me to try to find it. The Unknown wrote, *"The photograph is in the upper drawer of the secretary in the chamber."*

Laloge had two rooms,— one which he called the "salon," and another called the "chamber."

"There is some mistake," said he. "I have turned everything topsy-turvy in the place you mention and have found nothing."

In the evening having to search for some object in the drawer, he saw in the middle of a package of letter-paper a little dark end of something sticking out. He pulled it forth: it was the photograph.

6. Camille Bellon, No. 50 Avenue de Noailles, at Lyons, had three young children whose education he had intrusted to a young governess. This person left when the children entered college, and, sometime after, she married a very fine man, whose name I have unfortunately forgotten, but which I can easily find again if there is any need of it.

This young woman came on her wedding trip to visit her old employer. I was invited to go and pass a day with them at the château of my friend Bellon. During the course of this visit, we talked of spiritualistic phenomena; and the

* I had considerable acquaintance with him at the Nice Observatory, where, in 1884 and 1885, I made with him spectroscopic observations on the rotation of the sun.— C. F.

newly married man, a highly educated veterinary doctor, joked me about my so-called mediumship. I, of course, laughed about it and we parted the best kind of friends.

Some days afterward, I received a letter from my friend. He had himself received a letter from the young lady, who was in a great state of mind. She had lost her wedding ring, and was in despair. She begged my friend to ask me to recover it for her.

The Mysterious Force wrote, *"The ring slipped from her finger while she was asleep. It is on one of the cleats which hold up the mattress of the bed."*

I transmitted the *despatch*. The husband put his hands between the wood of the bed and the mattress. The wife did the same thing. Nothing was found. Some days afterwards, having decided to change the arrangement of their apartments, they moved their bed into another room. Of course they had to lift up the mattress, in order to get it into the other chamber. The ring was upon one of the cleats. They had not found it when they were hunting for it, because it had slipped *under* the mattress, which did not adhere to the cleat in that particular place.

7. One of my friends, named Boucaut, who lived at 15 quai de la Guillotière at Lyons, had lost a letter which he sadly wanted. He begged me to ask where it was.

The Invisible replied in writing, *"He must remember that he has an oven in his garden."*

Before showing it to him, I began to laugh, saying that it was a joke and had nothing to do with his request. As he insisted that it did, I read it to him.

"Why yes," he said to me, "that agrees very well. My tenant-farmer had just had his bread baked. I had heaps of papers which I wanted to get rid of, to burn up. My letter must have been burned in the pile which I reduced to ashes."

8. One evening, in an assembly composed of a score of persons, a lady dressed in black greeted my entrance with a little nervous laugh. After the customary introductions, this lady spoke to me as follows:

"Sir, would it be possible to ask your spirits to reply to a question I am going to ask you?"

"In the first place, madam, I have no spirits at my dis-

posal; but I should be a lack-wit indeed if I said yes. You, of course, don't suppose that I am unintelligent enough not to find some kind of an answer; and, consequently, if any 'spirits,' as you so kindly call them should happen to respond, you would not be convinced, and you would be right. Write your request. Put it in an envelope there on the table, and we will try. You see that I am not in a somnambulistic state, and you must believe that it is wholly impossible for me to know the contents of what you are going to enclose in it."

So said, so done.

At the end of five minutes I assure you I was very much embarrassed. I had written a reply, but it was such that I did not dare to communicate it. But here it is:

"You are in a very bad way, and, if you persist, you will be severely punished. Marriage is something sacred, it should never be regarded as a question of money."

After some oratorical precautions, I decided to read her this reply. The lady blushed up to the roots of her hair and stretched out her hands to seize her envelope.

"Pardon me, madam," I replied, putting my hand upon it. "You began by making fun of me. You wished a reply. It is only just, since we are making an experiment, that we know what the request was."

I tore open the envelope. Behold its contents:

"Will the marriage take place that I am trying to bring about between M. X. and Mlle. Z? And, in that case, shall I get what I have been promised?"

Notwithstanding this shameful exposure, the woman did not consider that she was beaten. She asked a second question under the same conditions.

Reply: "Leave me alone! When I was living you abandoned me. Now don't bother me."

Upon this, the lady got up and disappeared! I told you she was in mourning. This last request of hers was as follows: "What has become of the soul of my father?"

Her father had been ill for six months. Persons who were present and who were stupefied at the results, told me that during his illness she had not paid him a single visit.

9. One day, shortly after I had lost one of my good friends,

I was seated at my writing-desk with my head resting on my hand, and I was thinking of what the hereafter might possibly be. If all the work that a man had done was to be irretrievably lost, and if the beyond existed, I was wondering what the life might be that one would lead there. All of a sudden, the phenomenon well known to me occurred (that weird seizure of the arm). Of course, I allowed my arm to remain passive, and here is what I read:

"You wish to know what our occupations are? We organize matter, we ameliorate the condition of the spirits, and, above all, we adore the Creator of your souls and ours."

ARAGO.

In *all* the communications which I have obtained, every time a word representing an idea of the Supreme Being — such as God, the All-Powerful, etc.— came under my pen, the writing doubled in size, but immediately after resumed the same dimensions as before.* It would be very easy for me to give you still more numerous examples of the strange things that happened to me, but those I have given seem to me quite remarkable. I shall be happy if this true account can give you any assistance in your important researches.

The letter which my readers have just perused contains a series of cases of such great interest that I lost no time in entering into regular correspondence with the author. And first I thought I ought to ask him about the conclusions which he himself had been able to draw from his personal experience. The following is an abstract of his replies:

May 1st, 1899.

You ask me, my dear sir, the following questions:

1. Whether I have reached absolute conviction as to the existence of one or of several *spirits*?

I am a person of absolute good faith. I examined

* In the séances of which I spoke in the early part of this book (second chapter), when the word "God" was dictated the table beat a salute.— C. F.

myself as a surgeon would examine an invalid. I am a person of such good faith that I have long been seeking (without finding him) a skilful practitioner who would consent to study in my own person the phenomenon while it was taking place; to ascertain the state of my pulse, the warmth of the skin, etc.,— in a word, the apparent physical side. Furthermore, in my opinion there is no auto-suggestion in this thing; and the proof is that I was *absolutely ignorant* of the things that I was writing *mechanically*,— so mechanically that, when, by chance, my attention was called away, whether by reading or by conversation, and I forgot to look where my hand was going, when it approached the edge of the paper the writing would continue backward across the sheet in *reversed letters and just as fast*, so that I was obliged to turn the paper over in order by holding it to the light to read what was written on it.

So then, if there is neither auto-suggestion in it, nor a somnambulistic condition (I was completely awake and not at all hypnotized), then there must be external "forces" acting upon my senses, "intelligent forces." This is my fixed and unalterable opinion.

Now are these forces spirits? Do they belong to beings like ourselves? It is evident that this hypothesis would explain many things, but leave quite a number obscure. Since I several times discovered a mental state of the lowest kind among these "beings," I have reached a conclusion that it is not absolutely necessary to think that they are "men."

We are told that there are stars which photography alone can reveal, and which, possessing a color imperceptible to our eye, are invisible to us. Then there are the gases through which a human body passes without experiencing resistence. Who will say then, that there are not around us invisible beings?

And look at the instinct of the child, of the woman, of feeble beings in general. They fear darkness; isolation makes them afraid. This sentiment is instinctive, irrational. Is it not due to an intuitive perception of the presence of these invisible personages, or forces, against which they are helpless? That is pure hypothesis on my

part, but after all it seems to me defensible. As to the number of the invisible beings, I believe they are legion.

2. You ask me whether I have been able to establish their identity.

I answer that they sign some name or other, choosing in preference names of illustrious persons, in whose mouths they sometimes put the most stupid sort of expressions.

Furthermore the writing frequently ceases abruptly, as if an electric current has just been interrupted, and that without any appreciable reason. Then the writing changes, and sometimes sensible things end in absurdities, etc.

How explain this tangle of contradictions? I was so chafed and fretted by these incoherent results that I had for a long time abandoned the study of psychic forces, when your alluring researches came to wake in me my old self.

If the unconscious doubling of the personality of the individual (his externalization) can, in an extreme case, be sometimes admitted, it seems to me that there are cases in which this explanation becomes possible.

But I will explain. If, as respects the facts which happened to me personally, and *the authenticity of which I affirm to you upon my honor,* there are some in which this externalization could have been possible, there are others in which it seems to me impossible.

Yes, strictly speaking, I might have been able, without suspecting it, to externalize myself, or, rather, unknown to myself, to be influenced by my friend Dolard when, in my own presence, he mentally asked me what had become of the soul of a deceased sister of whose name and very existence I was ignorant; yes, the same thing may, strictly speaking, explain the responses I made to the lady who questioned me on the subject of a marriage and her father, although it would in that case be necessary to suppose that she dictated to me the words that I was writing; yes, my friend Boucaud, who was hunting letters, might, at the moment when he was asking me about them, have thought of that oven, of the existence of which I was ignorant; yes, all of that is (in the last analysis) possible, although it would need a large amount of good will to admit it.

Yes, once more I say — and always with much good will

— a table may be under the unconscious domination of a musician present and dictate a musical phrase. But, as it stands, it is difficult to admit the same phenomenon in the case of Victor Hugo, whose curious séances you have just described to the public. Why, just look at this great poet who, when he is asked by the table to put one or more questions *in verse,* and, not feeling that he is man enough, in spite of his genius, to improvise something passable, asks for a breathing spell to prepare his questions, and brings them in next day! — and yet you would wish that, on this same next day, a part of himself should perform its functions, *unknown to himself,* and compose *illico,* without any preparation, verses at least as fine as those which he took an entire day to create! — verses of a pitiless logic and more profound than his own!

Yet let us admit even that. You see, dear sir, that I have all the good will possible, and that I have the most profound respect for the scientific method. But can you explain by externalization the case of finding a lost object when one is even ignorant of the way in which the apartment is arranged where it has been lost? or the ability to know, two days in advance, of the death of a person about whom one was not thinking at all? A possible coincidence, you will tell me, but at least very strange.

And those inverted dictations? and those in which we are obliged to skip every other letter?

* * * * * * *

No, I believe that we need not give ourselves so much trouble and rack our brains, for it seems to me that it is like looking for mid-day at two o'clock in the afternoon. It would require the labor of all the devils to explain how this phenomenon can take place in our nature without the knowledge of the proprietor. I do not like to see a part of my personality scampering away, and then housing itself again without my knowing anything about it.

As to what concerns the production of this externalization in a way which I may call voluntary — when a person who feels himself dying thinks intensely about those whom he loves and whose absence he deplores, yes, it may be that his will, even unknown to himself, suggesting the absent

person produces the phenomena of telepathy; but, in the phenomena of which we are speaking, that explanation seems to me more than doubtful.

I find much more simple the explanation that the phenomena are caused by the presence and the action of an independent being,— a spirit, phantasm, or elemental.

In fine what are we all seeking? The proof of the survival of the ego, of *the individuality* after death. *To be or not to be* — it is all in that. For I frankly confess to you if I am going to dissolve away again into the great All, I should just as soon be annihilated. That is perhaps a weakness; but it cannot be helped. I hold above everything else to my individuality; not that I set a great value on it, but the feeling is instinctive and I believe that at bottom everybody is of this opinion. This then is the goal or end, which at all epochs has powerfully interested man and interests him still to-day.

One of the weightiest proofs of the survival of the individual being that I have ever met with is, in my opinion, the vision which my aunt had *several days* after the death of a friend of hers who, in order to give her a proof of the reality of her apparition, inspired in her by mental suggestion the power of seeing her in the dress she had on in her coffin, *a costume which my aunt had never seen.*

This is one of the fine and rare arguments in favor of the survival of the soul, so far as my experience goes. Many things are explained by this survival,— above all, what is apparently the frightful injustice of this world.

To these important observations of M. Castex-Dégrange, I should like to add those of a distinguished scientist, who has also for a long time now devoted himself to the analysis and synthesis of these phenomena. I mean M. Goupil. Some of his studies are yet in manuscript form, and I am indebted to this savant for permission to use them. Others have been reprinted in a curious brochure (*Pour et Contre,* Tours, 1893). But in citing such a large number of instances and experiments, I am abusing the kindness of my

readers, even the most curious and the most eager for knowledge. However, I will at least point out the conclusions drawn by M. Goupil from his personal experiences. They are to be found in the work of which I have just spoken, and are as follows:

Table-turning séances yield very insignificant results, regarded as pure science obtained from the spirits; but they are not lacking in interest from the point of view of the analysis of the facts and of the science to be established in accordance with the causes and the laws which govern these phenomena.

I believe that I can draw the conclusion from these phenomena that two theories (the *reflex* and the *Spiritualistic*) may be drawn from the facts. It seems to me impossible to maintain that an intelligent agent other than that of the experimenters is not operative in them. What is this intelligence? I believe it is very hazardous to express a confident opinion on this point in view of the incongruity of all these communications.

It is also undeniable that the intellects of the operators enter into the phenomena to a great extent, and that in many cases they alone seem to act.

I should perhaps be sufficiently near the truth if I gave the following definition of the phenomenon:

Functions external to the animistic principle of the operators, and above all of the medium, and governed by their intellects, but sometimes associated with an intellect unknown and relatively independent of man.

Experimenters have maintained that communications obtained from the so-called spirits through mediums never show more intellectual capacity than is possessed by the most intelligent person among the sitters. This assertion is generally justified, but it is not absolute.

I will mention, in connection with this point, some séances which took place at my house. The medium was Mme. G., whose life I had been familiar with for twenty-seven years, day by day, and consequently had an intimate acquaintance with her character, her manners, temperament and education.

The communications which were obtained through mediumistic writing in these séances extended over a period of more than fifteen months.

Mme. G. had the sense of a kind of *mental,* rather than auricular, psychical rather than physical, audition which dictated to her what she had to write in bits of sentences one after another; and this impression was accompanied by a strong desire to write, somewhat like the intense longing that a woman with child experiences.

If this medium gave her attention to the sense of the writing during the composition, the current of power was shut off, and everything resumed the state of ordinary composition. Her condition was that of a clerk writing unconcernedly and mechanically under the dictation of a superior. It resulted from this that the writings, executed at the maximum speed of the subject, and generally without retardation or stoppage after the questions, were in one long string, without punctuation or paragraphs, and full of mistakes in spelling, resulting from the fact that the medium was acquainted with the sense of the writing only when she had read it over, at least in the case of rather long communications.

The gist or substance of the *writings* seems very frequently to be drawn from our ideas, our conversation, our reading, or our thoughts; but there are certain plainly marked exceptions.

While Mme. G. was writing, I applied myself to other occupations,— calculations, music, etc., or I walked up and down in the room; but I only examined the replies when she had stopped writing.

Nothing indicated that the physical and physiological condition of the medium during these writings was in any way different from that of her ordinary condition. Mme. G. could interrupt her writing at will and apply herself to other occupations or make responses about things unconnected with the séance, and it never happened that she found herself short of an answer.

There is no parallelism between these writings and the mental endowments of Mme. G., either in promptness of repartee, in breadth of view, or in philosophic depth.

In 1890 I bought Flammarion's *Uranie*, which Mme. G. did not read until 1891. I found in it doctrines absolutely similar to those which I had deduced from my experiments and from our communications. Any one who should compare these mediumistic writings with the philosophical works of the French astronomer would be led to believe that Mme. G. had previously read them.

Psychic phenomena have this peculiarity, that identical assertions are made in far distant places through mediums who have never known each other,— a fact which would tend to demonstrate that, running through many declarations which apparently contradict each other, there is a certain uniformity of action on the part of the intelligent occult power.

In 1890 I also read the work of Dr. Antoine Cros, *The Problem*, in which I also found astonishing agreements between the ideas of this author and those of our Unknown Inspirer,— among others this: that man himself creates his Paradises and becomes that to which he has aspired.

We should always seek the simplest explanation of the facts, without desiring to find the occult in them, and above all without looking for spirits everywhere, but also without wishing, under any circumstances, to reject the intervention of unknown agents and deny the facts when they cannot be explained.

It is rather curious to remark that if we compare the dictations given by the tables and the other so-called mediumistic phenomena with observations made in conditions of natural or hypnotic somnambulism, we find the same phases of incoherence, hesitation, error, lucidity and supernormal excitation of the faculties.

On the other hand, the supernormal excitation of the faculties neither explains the cases of prediction nor the citation of unknown facts. In the case of many telepathic or other phenomena every explanation limps that excludes the intervention of external intelligences.. But it is still impossible to formulate a theory. There exists a gap to be filled by new discoveries.*

* Goupil, *Pour et Contre*, p. 113.

I will add to these conclusions two short extracts from a letter which M. Goupil wrote me on the 13th of April, 1899, and from another one on the 1st of June, in the same year.

1. Replying to the request which you address to your readers, I will say that I have never observed telepathic cases, but that I have for a long time been experimenting with the phenomena *called* Spiritualistic, of which I was a simple analyst. I have come to no conclusions as to explanatory theories. However, I consider it *probable* that there exists powerful intelligences other than human that intervene under certain circumstances. My opinion is based upon a large number of very curious personal occurrences. In my opinion, we have not in these phenomena the appearance of simple coincidences, but of circumstances willed, foreseen, and produced by an intelligent *x*.

2. Of the ensemble — of all that I have seen — there is simultaneously the reflex action of the experimenters and an independent personality. This hypothesis seems to me true, while I should make at the same time this reservation, that the personality or spirit is not a finished being, with limitations of form, such as an invisible man would have, going, coming and executing commissions for human beings. I have glimpses of a grander and vaster system.

Take a handful of the ocean, and you have *water*.

Take a handful of the atmosphere, and you have *air*.

Take a handful of space, and you have *mind*.

That is the way I interpret it. That is why mind is always present, ready to respond when it finds in any place a stimulus that incites it, and an organism which permits it to manifest itself.

Let us confess that the problem is complex and that it is good to compare all the hypotheses.*

* It has been my desire to give in this place the result of the personal experience of a large number of men anxious to know the truth; above all to reply to ignorant journalists who invite their readers to indulge in supercilious scorn of these researches and experimenters. At the very moment when I was correcting the proofs of these last pages I received a journal, *Le Lyon républicain*, of the 25th of January, 1907, which has for its leading article a quite preposterous diatribe

From the numerous papers and documents laid out at this moment upon my writing-desk, I can only select a small number for insertion here, although they all have their special interest. One is overwhelmed by the richness and vastness of the material. However, out of the material acquired in the course of the Inquiry of which I spoke above, let me give here one piece which I should regret not to be able to include within the compass of the present work.

The former governess of the poet Alfred de Musset, Mme. Martelet, née Adèle Colin,— who still lives in Paris and who has just been present (in 1906) at the unveiling of the statue of the poet (although his death dates from the year 1857),— has given the following account, which may be added here to that of movements without contact.

An inexplicable occurrence which my sister, Mme. Charlot, and myself witnessed impressed us most deeply. It took place at the time of the last sickness of M. de Musset. I shall never forget the emotion we felt that evening, and I still have the minutest incidents of the strange occurrence stamped on my memory.

My master, who had taken no rest during all the previous night, had toward the end of the day, fallen into a doze in a large easy-chair. My sister and I had entered the chamber

against me signed "Robert Estienne." The performance shows that the author does not know what he is talking about nor the man of whom he is treating.

There is evidently no reason in the nature of things why the city of Lyons should be more disposed to error than any other point on the globe. But mark the coincidence: I received, at the same time, a number of *L'Université catholique*, of Lyons, in which a certain Abbé Delfour speaks of "supernatural contemporary facts" without understanding a word of the subject.

No, the trouble is not with the city of Lyons merely. There are blind people everywhere. You can read a dissertation *ejusdem farinæ*, signed by the Jesuit Lucien Roure, in *Les Études religieuses*, published at Paris, with critical judgments worthy of a traveling salesman.

In this connection, you can read in the *Nouveau Catéchisme du diocèse de Nancy:* "Q. What must we think of the demonstrated facts of Spiritualism, somnambulism, and magnetism? — A. We must attribute them to the devil, and it would be a sin to take part in them in any way whatever."

on tip-toe, in order not to trouble this precious rest of his, and we sat quietly down in a corner where we were concealed by the curtains of the bed.

The invalid could not perceive us, but we saw him very well, and I sorrowfully contemplated that suffering face which I knew I could not much longer look upon. And still, even now, when I recall the features of my master, I see them as they appeared to me on that evening,— the eyes closed, his finely shaped head resting upon the easy-chair, and his long, thin, pale hands (the paleness of the dead already upon them), crossed upon his knees in a contracted and shriveled way. We remained motionless and silent, and the chamber, lighted only by a feeble lamp, seemed wrapped in shadows and was filled with that peculiar mournful atmosphere that characterizes the chamber of the dying.

Suddenly we heard a deep sigh. The invalid had waked up and I saw his looks go toward the bell-cord that hung near the fireplace some steps from the easy-chair. He evidently wanted to ring, and I do not know what feeling it was that held me nailed to my place. Still I did not move, and my master, having a horror of solitude and believing that he was alone in his chamber, rose up, stretched out his arm with the evident intention of calling someone; but, already fatigued by this effort, he fell back into the chair without having taken a step. It was at this moment that we had an experience that terrified us. The bell, which the sick man had not touched, rang, and instinctively, at the same moment, my sister and I seized each other's hands, each anxiously interrogating the face of the other.

"Did you hear?"—"Did you see?"—"He did not move from his chair!"

At this moment the nurse entered and innocently asked, "Did you ring, sir?"

This event put us into an extraordinary state of mind, and if I had not had my sister with me I should have believed that it was an hallucination. But both of us saw, and all three of us heard. It is a good many years now since all that took place, but I can still hear the ominous and mournful sound of that bell ringing in the silence of the chamber.

This account, also, seems not to be devoid of value. There are undoubtedly several ways of explaining it. The first is that which occurs to everybody.

The Frenchman, born malign, says Boileau, does not mince matters, and, apropos of this story of De Musset, simply exclaims in his language (always flashy and devoid of literary distinction), "What a fine piece of rot!" And that is all there is to it. A few may reflect for a moment more, and not admit that there is necessarily any invention on the part of the governess, and may think that she, as well as her sister, believed that De Musset had not touched the bell cord, while in reality he touched it with the ends of his fingers. But these ladies can answer that the distance between the hand of the poet and the cord was too great, that the cord was inaccessible in that position, *and that it was that very thing which impressed them,* and without which there would have been no story to tell. We may also suppose that the bell was rung by some external force impinging on it, although the cord was not pulled. We may still further suppose that, in the restlessness of these hours of distress, the waiting-woman came in without having heard anything, and that the coincidence of her arrival with the gesture of De Musset surprised the two watchers, who afterward thought that they had heard the bell. However, to sum up the whole thing, while we may regard the occurrence as inexplicable, we may yet admit its truth as narrated. This seems to me the most logical view, and the more so that the gentle poet had, several times in his life, given other proofs of possessing faculties of this kind.

I will add here one more instance of the *movement of objects without contact* which is not without value. It was published by Dr. Coues in the *Annales des sciences psychiques,* for the year 1893. The views stated are also worthy

of being summed up here. The observers, Dr. and Mrs. Elliott Coues, speak out of their own personal experience.

It is a principle of physics that a heavy body can only be put in motion by the direct application of a mechanical force sufficient to overcome its inertia, and orthodox science maintains that the idea of action at a distance is an erroneous idea.

The authors of the present study assert, on the contrary, that heavy bodies may be, and frequently are, put in motion without any kind of direct application of mechanical force, and that action at a distance is a well-established fact in nature. We offer proofs of these propositions based on a series of experiments undertaken for this purpose.

We often repeated these experiments, *during more than two years,* with results that were convincing not only to ourselves but to many other witnesses.

We do not understand how the scientific world has been able to accept the idea that the expression " action at a distance " is a false one, unless those who see an error in the assertion attach to these words a special meaning of which we are ignorant.

It is certain that the sun acts at a distance upon the earth and the other planets of the solar system. It is certain that a piece of anything thrown into the air falls back in consequence of the attraction of gravitation,— and that, too, at no matter what distance. The law of gravitation, so far as we know it, is universal, and it is not yet proved that there exists a ponderable, or otherwise palpable, medium which serves to transmit the force.*

We go a little farther, even, and declare that, probably, all action of matter is an action at a distance, especially since (so far as our knowledge goes) there are not in the whole universe two particles of matter in absolute contact; and, consequently, if they act the one upon the other, it must

*** Newton, as is well known, declares, in his letter to Bentley, that he can only explain gravitation by supposing the existence of a medium which transmits it. Yet, to our senses, the ether would not be a material thing. But, however that may be, celestial bodies do certainly act at a distance one upon another.**

be at some distance, this distance being infinitely small and entirely inappreciable to our senses.

We therefore maintain that the law of movement at a distance is a universal mechanical law and that the idea that it does not exist is a kind of a paradox, simply a hair-splitting quibble.

The two authors of this study sometimes experimented together, sometimes separately, more often with one or more additional experimenters, sometimes with four, five, six, seven or eight. They witnessed at different times, in full light, the vigorous and even violent movements of a large table which nobody touched directly or indirectly. The persons mentioned were all friends of theirs, living, like them, in the city of Washington, and all sincerely desirous of knowing the truth of the matter. There was no professional medium.

The scene opens in a little parlor in our house (they write). In the centre of the room is a large heavy oak table in marquetry, which weighs about one hundred pounds. The top is oval and measures four feet and a half by three and a half. It has only a single support, in the middle, branching off into three legs, or feet, with casters. Above it is the chandelier, several burners of which are lighted and give sufficient light for the ladies to read and work by the table. Dr. Coues is seated in his easy-chair, in a corner of this large room, at a distance from the table, reading or writing by the light of two other burners.

The ladies express the wish to see if the table "will do something," as they say.

The cloth is removed. Mrs. C., seated in a low rocking-chair, places her hands on the table. Mrs. A., also seated in a low easy-chair, does the same, facing her at the opposite side of the table. Their hands are opened and placed upon the upper surface of the table. In this position, they cannot lift the table by themselves with their hands: that is an entire impossibility. Neither can they push it by leaning

on it in order to make it rise on the opposite side, except by muscular effort easily observed. Neither can they lift the table unaided with their knees, since these are at least a foot away from the top and since moreover their feet never leave the floor. Finally, they cannot lift the table by means of their toes slipped under a foot of the table, because the table is too heavy.

Under these conditions, and beneath the full light of at least four gas jets, the table habitually began to crack or snap, and produced divers strange noises quite different from those which could be obtained by leaning upon it. These noises soon showed, if I may so say, some reason in their incoherence, and certain definite strokes or rappings came to represent "yes," and "no." According to an arranged code of signals, we were able to enter into a conversation with an unknown being. Then the table was generally polite enough to do what it was asked. One side or another of it tipped as we wished. It went from one side or the other according as we requested. Under these circumstances we made the following experiments:

The two ladies removed their hands from the table and drew back their chairs, while still remaining seated in them at a distance of *one or two feet.* Dr. Coues from his arm chair saw distinctly above and beneath the table. The feet of the ladies were from twelve to thirty-six inches distant from the feet of the table. Their heads and their hands were still farther off. There was no contact with it. Even their dresses were not within a foot or two of it. Under these conditions, the table lifted one of its feet and let it fall heavily back. It lifted two feet to a height of from two to six inches, and, when they fell back, the blow was heavy enough to make the floor shake, and make the glass globes of the chandelier tinkle. Besides these energetic, even violent movements, the table displayed its power by means of raps or balancings.

Its *yes's* or its *no's* were commonly rational, sometimes in agreement with the ideas of the one who put the question, sometimes in persistent opposition to those ideas. Sometimes the invisible agent affirmed that he was a certain person, and maintained that individuality during an entire

force. Or possibly this character was dropped, so to speak, or at least ceased to appear, and another person, or another being, took its place, with different ideas and opinions. Thereupon, the raps or the movements also differed. Finally the inanimate table, which was supposed to be inert, took on for the moment all the appearance of a living being possessing an intelligence as keen as that of an ordinary person. It expressed itself with as much will and individuality as our friends caused it to do by their voices and their gestures. And yet, during this whole time *no one of the three persons present touched the table*, the two ladies being at a distance of two or three feet, and Dr. Coues seven to ten feet, in a corner of the room, which was lighted by four gas jets. There was no other person present that one could see. If this was not a case of telekinesis, or movement of objects without contact, absolutely different from ordinary and normal mechanical movement, we can certainly no longer put trust in our senses.

These observations of Dr. and Mrs. Elliott Coues are all as positively accurate and authentic as the occurrence of an earthquake, the falling of a fire-ball from the sky, a chemical combination, an experiment with an electrical machine. The sceptics who smile at them and say that everything is fraud are persons in whom the sense of logic is wanting.

As to the explanation to be given of them, that is a different question from that of the pure and simple authentication of the facts.

Those to whom these descriptions of phenomena and experiments appeal (adds the narrator) must take particular notice that the authors of this study, although they have had occasion to speak of conversations held with the table and to mention special tones of voice, and intelligible messages imparted by pieces of inert wood, *categorically refuse to approach the question of the source or origin of the intelligence thus manifested.* That is an entirely different question, with which we do not meddle. The single, or at least the

principal, object of the publication of this study is to establish the truth of movement without contact.

But, having very plainly verified the fact and established it by proofs in our possession, it might perhaps be expected of us that we offer some explanation of the extraordinary things that we vouch for. We respectfully reply that we are both too old and perhaps too wise to claim to explain anything. When we were younger, and fancied that we knew everything, we could explain everything,— at least to our own satisfaction. Now that we have lived long enough, we have discovered that every explanation of a thing raises at least two new questions, and we do not feel any desire to stumble against new difficulties; for these multiply in geometrical ratio, in proportion to the extent and accuracy of our researches. We hold to this principle, that nothing is explained so long as there still remains an explanation to be sought. Under these conditions, we shall do better to recognize the inexplicability of these psychical mysteries, before, rather than after, futile theories about them.

There you have what is absolutely reasonable, whatever may be said of it.

And now, after these innumerable verifications of facts, and after all these professions of faith, shall I myself, have the courage, the pretension, the pride or the simplicity of mind, to start in search of the much desired information?

Whether we find it or not, the facts nevertheless exist. It was the object of this book to convince my readers of this,— readers who should give to the subject their close attention, be possessed of unbiased judgment and good faith, and have the eyes of the spirit wide open and free from all weakness.

CHAPTER XII

EXPLANATORY HYPOTHESES — THEORIES AND DOCTRINES — CONCLUSIONS OF THE AUTHOR

It is quite in the fashion, as a general thing, to profess absolute scepticism regarding the phenomena which form the subject of the present work. In the opinion of three-quarters of the citizens of our planet all unexplained noises in haunted houses; all displacements without contact of bodies more or less heavy; all movements of tables, pianos, or other objects produced in the experiments styled Spiritualistic; all communications dictated by raps or by unconscious writing; all apparitions, partial or total, of phantom forms — are illusions, hallucinations, or hoaxes. No explanation is needed. The only rational opinion is that all "mediums," professional or not, are imposters, and the participators in a séance are imbeciles.

Sometimes one of these eminent judges consents, not to cease tipping the wink and smiling in his royal competency, but to condescend to be present at a séance. If, as only too frequently happens, no response to the command of the will is obtained, the illustrious observer retires, firmly convinced that, by his extraordinary penetration, he has discovered the cheat and blocked everything by his clairvoyant intuition. He at once writes to the journals, shows up the fraud, and sheds humanitarian crocodile tears over the sad spectacle of men, apparently intelligent, allowing themselves to be taken in by impostures, detected by him at the first blush.

This first and easy explanation, that everything in the

manifestations is fraud, has been so often exposed, discussed, and refuted during the course of this work that my readers probably consider it (at least I hope they do) as entirely, absolutely, and definitely decided and thrown out of the ring.

However, I advise you not to speak too freely of these things at table, or in a drawing room if you do not like to have people making fun of you, more or less discreetly. If you air your views in public, you will produce the same effect as those eccentric fellows of the time of Ptolemy, who dared to speak of the movement of the earth and excited such inextinguishable laughter in respectable society that the echoes ring with it still in Athens, Alexandria, and Rome. It is only a repetition of what took place when Galileo spoke of the spots on the sun, Galvani of electricity, Jenner of vaccine, Jouffroy and Fulton of the steamship, Chappe of the telegraph, Lebon of gas-lighting, Stephenson of railways, Daguerre of photography, Boucher de Perthes of the fossil man, Mayer of thermodynamics, Wheatstone of the transatlantic cable, etc. If we could gather up all the sarcasms launched at the heads of these "poor crazy-wits," we should get a fine basket of venerable blunders, moldy as a remainder biscuit after a voyage.

So let us not speak too much of our mysteries — unless it amuses us, in our turn, to ask some questions of the prettiest dolls in the company. One of them inquired in my presence, yesterday evening, what the man named Lavoisier did, and whether he was dead. Another thought that Auguste Comte was a writer of songs and asked if any one knew one of them which would suit a mezzo-soprano voice. Another was astonished that Louis XIV had not built one of the two railway stations of Versailles nearer the palace.

Moreover, on my balcony, a member of the Institute, who saw Jupiter shining in the southern sky at the meridian point, over one of the cupolas of the Observatory, obstinately

maintained in my presence that this luminary was the polar star. I did not dispute the point with him *too* long!

There are not a few people who believe at once in the value of universal suffrage and in that of titles of nobility. Of course, we will not force these Janus-faced wise men to vote upon the admissibility of psychic phenomena into the sphere of science.

But we will henceforth consider this admissibility as something granted, and, tossing back to the laughing sceptics, to the habitués of clubs and cliques, the general opinion of the world, of which I have just spoken, begin here our logical analysis.

We have had under consideration during the course of this work several theories by scientific investigators which are worthy of attention. Let us first of all sum these up.

In the opinion of Gasparin, these unexplained movements are produced by a *fluid,* emanating from us under the action of our will.

Professor Thury thinks that this fluid, which he calls *psychode,* is a substance which forms a link between the soul and the body; but there may also exist certain wills external to ourselves, and of unknown nature, working side by side with us.

The chemist Crookes attributes the phenomena to psychic force, this being the agent by which the phenomena are produced; but he adds that this force may well be, in certain cases, seized upon and directed by some other intelligence. "The difference between the partisans of psychic force and those of Spiritualism," he writes, "consists in this: we maintain that it is not yet *proved* that there exists a directing agent other than the intelligence of the medium and that presence and actions of the spirits of the dead are felt in the phenomena, while, on the contrary, the Spiritualists accept as an article of faith, without demanding more proofs thereof, that these spirits are the sole agents in the production of the observed facts."

Albert de Rochas defines these phenomena as "*an externalization of motivity,*" and considers them to be produced by the fluidic double, "the astral body" of the medium, a nerve-fluid able to act and perceive at a distance.

Lombroso declares that the explanation must be sought simply in the nervous system of the medium, and that we have in the phenomena *transformation of forces.*

Dr. Ochorowicz affirms that he has not found proofs in favor of the Spiritualistic hypothesis, any more than he has in favor of the intervention of external intelligences, and that the cause of the phenomena is a *fluidic double* detaching itself from the organism of the medium.

The astronomer Porro is inclined to admit the possible action of unknown spirits, of living forms different from our own, not necessarily the souls of the dead, but psychical entities to be studied. In a recent letter he wrote me that the theosophic doctrine appeared to him to approach the nearest to a solution.*

Prof. Charles Richet thinks that the Spiritualistic hypothesis is far from being demonstrated, that the observed facts relate to an entirely different order of causes, as yet very difficult to disentangle and that in the present state of our knowledge no final conclusion can be agreed on.

The naturalist Wallace, Professor Morgan, and the electrician Varley declare, on the other hand, that sufficient proof has been given them to warrant them in accepting without reserve the Spiritualistic doctrine of disembodied souls.

Prof. James H. Hyslop, of the University of Columbia, who has made a special study of these phenomena, in the Proceedings of the London Society for Psychical Research, and in his works *Science and a Future Life* and *Enigmas of Psychical Research,* thinks that there are not yet enough severely critical verifications to warrant any theory.

* The initiated know that according to this doctrine the terrestrial human being is composed of five entities: the physical body; the ethereal double, a little less gross, surviving the first for some time; the astral body, still more subtile; the mental body, or intelligence, surviving the three preceding; and finally the Ego, or indestructible soul.

Dr. Grasset, a disciple of Pierre Janet, does not admit displacement of objects, or levitation, or the greater part of the facts described in this book as proved, and thinks what is called Spiritualism is a question of medical biology, of "the physiopathology of the nervous centres," in which a celebrated cerebral polygon with a musical conductor named O, plays an automatic rôle of a very curious description.

Dr. Maxwell concludes from his observations that the greater part of the phenomena, the reality of which cannot be doubted, are produced by a force existing in us, that this force is intelligent, and that the intelligence manifested comes from the experimenters. This would be a kind of collective consciousness.

M. Marcel Mangin does not adopt this "collective consciousness," and declares that it is certain that the being, in the séances, who asserts that he is a manifestation is "the sub-consciousness of the medium."

The foregoing are some of the principal opinions. It would take a whole book to discuss in writing the proposed explanations, but that is not my object. My aim was to focus the question on what concerns THE ADMISSIBILITY OF THE PHENOMENA INTO THE SPHERE OF POSITIVE SCIENCE.

However, now that this is done, we cannot but ask ourselves, what conclusions may be drawn from all these observations.

If we wish to obtain, after this mass of verifications, a satisfactory rational explanation, it seems to me we must proceed gradually, classify the facts, analyze them, and only admit them in proportion to their absolute and demonstrated certainty. We live in a very complex universe, and the most singular confusion has arisen among phenomena which are very distinct one from another.

As I said in 1869, at the tomb of Allan Kardec, "The causes in action are of several kinds, and are more numerous than one would suppose."

Can we explain the observed phenomena, or at least any portion of it? It is our duty to try. For this purpose I shall classify them in the order of increasing difficulties. It is always advisable to begin with the beginning.

May I hope that the reader will have got a clear idea in his mind of the experiments and observations set forth in the previous pages of this work? It would be a little insipid to refer every time to the pages where the phenomena have been described.

1. ROTATION OF THE TABLE, *with contact of the hands of a certain number of operators.*

This rotation can be explained by an unconscious impulse given to the table. All that is necessary is that each one push a little in the same way, and the movement will take place.

2. MOVEMENT OF THE TABLE, *the hands of the experimenters resting upon it.*

The operators push and the table is led along without their knowing it, each one acting in a greater or less degree. They think they are following it, but they are really leading it along. We have in this only the result of muscular efforts, generally of a rather slight nature.

3. LIFTING OF THE TABLE *on the side opposite to that upon which the hands of the principal actor are placed.*

Nothing is more simple. The pressure of the hands upon a centre-table with three legs suffices to produce the lifting of the leg the farthest removed, and thus to strike all the letters of the alphabet. The movement is less easy in the case of a table with four legs; but it can also be obtained.

These three movements are the only ones, it seems to me, which can be explained without the least mystery. Still, the third is only explicable in case the table is not too heavy.

4. IMPARTING LIFE TO THE TABLE.

Several experimenters being seated around the table, and forming the chain with the desire of seeing it rise, the waves

of a kind of vibrations (light at first) are perceived to be passing through the wood. Then balancings are noticed, some of which may be due to muscular impulses. But already something more is now mingled in the process. The table seems to be set in motion of itself. Sometimes it rises, no longer as if moved by a lever, or by pressure on one side, but *under the hands,* as if it were sticking to them. This levitation is contrary to the law of gravitation. Hence we have here a discharge of force. This force emanates from our organism. There is no sufficient reason to seek for anything else. Nevertheless, what we have detected is a thing of prime importance.

5. Rotation without contact.

The table being in rapid rotation, we can remove our hands from it, and see it continue the movement. The velocity or momentum acquired may explain the momentary continuation of this movement and the explanation given in the case of No. 1 may suffice. But there is more in it than this. Rotation is obtained by holding the hands at a distance of some inches above the table, without any contact. A light layer of flour dusted over the table is found to be untouched by a single finger. Hence the force emitted by the operators must penetrate the table.

The experiments prove that we have in us a force capable of acting at a distance upon matter, a natural force, generally latent, but developed in different degrees in different mediums. The action of the force is manifested under conditions as yet imperfectly determined. (See pp. 81, 248 *et seq.*) We can act upon brute matter, upon living matter, upon the brain and upon the mind. This action of the will is shown in telepathy. It is shown more simply still by means of a well-known experiment: at the theatre, in church, when hearing music, a man accustomed to the exercise of will-power, and sitting several rows of seats behind a woman, say, compels her to turn around in less than a minute. A force emanates from us, from our spirit, acting undoubtedly by means of etherwaves, the point of departure of which is a cerebral movement.

And there is nothing very mysterious in this. I bring

my hand near a thermometer, and ascertain that something invisible is escaping from my hand, and, at a certain remove, making the column of mercury rise. This something else is heat; that is to say, aërial waves in movement. Then why might not other radiations emanate from our hands and from our whole being?

But, nevertheless, there is a very important scientific fact to be established.

This physical force is greater than that of the muscles, as I am going to prove.

6. Lifting of weights.

A table is loaded with sacks of sand and with stones weighing altogether from 165 to 176 pounds. The table lifts each of its three legs several times in succession. But it succumbs under the load and is broken. The operators ascertain that their muscular force would not have sufficed to produce the observed movements. The will acts by a dynamic prolongation.

7. Liftings without contact.

The hands forming the chain some inches above the side of the table which is to be lifted, and all wills being concentrated on the one idea, the lifting of each of the legs in succession takes place. The liftings are more readily obtained than rotations without contact. An energetic will seems to be indispensable. The unknown force passes from the experimenters to the table without any contact. If the table is dusted over with flour, as I said, not the slightest finger-touch is seen to be imprinted on it.

The will of the sitters is in play. The table is ordered to make such and such a movement and it obeys. This will seems to be prolonged beyond the bodies of the operating experimenters in the shape of a force that is quite intense.

This power is developed by action. The balancings prepare for the rising and the latter for complete levitation.

8. Reducing the weight of the table or other objects.

A quadrangular table is suspended by one of its sides to a dynamometer attached to a cord which is held above by some

ook. The needle of the dynamometer, which, state of rest, indicates 35 kilograms, gradually descends 2, 1, 0 kilograms.

mahogany board is placed horizontally, and hung by one to a spring balance. This balance (or scales), has a int which touches a pane of glass blackened by smoke. n this pane of glass is put in movement, the needle ces a horizontal line. During the experiments, this line no longer straight, but marks reductions and increments of eight, produced without any contact of hands. In the experiments of Crookes we saw that the weight of a board increased almost 1¼ pounds.

medium places his hands *upon* the back of a chair and the chair.

AUGMENTATION OF THE WEIGHT OF A TABLE OR OTHER OBJECTS.— PRESSURES EXERTED.

The dynamometric experiments that we have just recalled themselves go to show this augmentation.

I have more than once seen, in other circumstances, a table become so heavy that it was absolutely impossible for two men to lift it from the floor. When they succeeded in doing so, in a measure, by means of quick jerks, it still seemed to stick to the floor as if held by glue or india rubber, which immediately pulled it back to the floor after it had been slightly displaced.

In all these experiments, there is proof of the action of an unknown natural force emanating from the chief experimenter or from the collective powers of the group, an organic force under the influence of the will. It is not necessary to suppose the presence of superhuman spirits.

10. THE COMPLETE LIFTING UP, OR LEVITATION OF THE TABLE.

As there may be confusion in applying the word "lifting" to a table which only rises on one side at a certain angle, while still touching the floor, it is expedient to apply the word "levitation" to the case in which it is completely separated from the floor.

Generally, in levitation, it rises from six to eight inches

from the floor, for some seconds only, and then falls back. It moves up in a balancing, undulating, hesitating way, with effort, and then falls straight down. While resting our hands upon it, we have the sensation of a fluid resistance, as of it were in water,— the kind of fluid sensation we experience when we bring a piece of iron into the field of force of a magnet.

A table, a chair or other movable article sometimes rises, not merely a foot or so, but almost to the height of one's head, and even as high as the ceiling.

The force brought into play is considerable.

11. Levitation of human bodies.

This case is of the same order as the preceding. The medium may be raised with his chair and placed upon the table, sometimes in unstable equilibrium. He may also be lifted alone (without the chair).*

In this case the Unknown Force does not seem to be simply mechanical: intention is mingled with the act, and ideas of precaution, which, however may proceed from the mentality of the medium himself, aided perhaps by that of the sitters. This fact seems to us to contravene known scientific laws.

* These observations may be compared with a little social diversion which is rather popular, and is particularly described in one of the first works of Sir David Brewster (*Letters to Walter Scott upon Natural Magic*) in the following terms:

"The heaviest person of the company lies down on two chairs, the shoulders resting on one and the legs on the other. Four persons, one at each shoulder and one at each foot, try to lift him, and at first find the thing difficult to do. Then the subject of the experiments gives two signals by clapping his hands twice. At the first signal, he and the four others inhale deeply. When the five persons are full of air he gives the second signal, which is for the lifting. This takes place without the least difficulty, as if the person lifted were as light as a feather."

I have frequently performed the same experiment upon a man in a sitting posture by placing two fingers under his legs and two under his arm-pits, the operators inhaling all together uniformly.

This is undoubtedly a case of biological action. But what is the essential nature of gravitation? Faraday regarded it as an "electro-magnetic" force. Weber explains the movement of the planets around the sun by "electro-dynamism." The tails of comets, always turned away from the sun, indicate a solar repulsion coincident with the attraction. We know no more to-day than in the time of Newton what gravitation really is.

It is the same case as that of the cat which knows how to turn of itself, without any outside support or leverage, when it falls from a roof, and always falls on its feet, a fact contrary to the principles of mechanics taught in every university in the world.

12. Lifting of very heavy pieces of furniture.

A piano weighing more than 750 pounds rises up off of its two front legs, and it is ascertained that its weight varies. The force with which it is animated arises from the proximity of a child eleven years old, but it is not the conscious will of this child which acts.— A heavy oak dining-table may rise so high that its under side can be inspected during the levitation.

13. Displacement of objects without contact.

A heavy easy-chair moves about of its own accord in the room. Heavy curtains reaching from the ceiling to the floor are forcibly swelled out as if by a gust of wind, and envelop as with a hood the heads of persons seated at a table, at a distance of three feet and more. A centre table persists in *the endeavor* to climb upon the experiment-table — and gets there. While a sceptical spectator is bantering the "spirits," the table about which the experiments are taking place makes a move towards the incredulous person, drawing the sitters along with it, and pins him to the wall until he begs for mercy.

As in the preceding cases, these movements may represent the expression of the will of the medium, and may not necessarily indicate the presence of a mind external to his own. Nevertheless — ?

14. Raps and typtology.

In tables, in pianos, and other pieces of furniture, in the walls, in the air, raps are heard, and their vibrations perceived by the touch. They somewhat resemble the sounds obtainable by tapping against a piece of wood with the joint of the bent finger. The question arises, Whence come these noises? The question is asked aloud. They are repeated. The request is made that a certain number of strokes be

rapped. The raps are heard. Well-known airs are accompanied by raps beaten in perfect time with them and identifiable as the counterpart of the airs. When bits of music are played, the accompaniment is rapped out. Things take place as if an invisible being were listening and acting. But how could a being without acoustic nerve and without a tympanum hear? The sonorous waves must strike something in order to be interpreted. Is this a mental transmission?

These raps are made. Who makes them? And how? The mysterious force emits radiations of wave-lengths inaccessible to our retina, but powerful and rapid, without doubt more rapid than those of light, and situated beyond the ultraviolet. Besides, light impedes their action.

In proportion as we advance in the examination of the phenomena, the psychic, intellectual, mental element is more and more mingled with the physical and mechanical element. In the case we are considering we are forced to admit the presence, the action, of a thought. Is this thought simply that of the medium, of the chief experimenter, or the resultant of the thoughts of all the sitters united?

Since these raps or those made by the legs of the table, on being interrogated, dictate words and phrases and express ideas, there is something more in the matter than a simple mechanical action. The unknown force, the existence of which we have been obliged to admit in the preceding observations, is in this case at the service of an intelligence. The mystery grows complicated.

It is owing to this intellectual element that I proposed (before 1865; see p. xix) to give the name "*psychic*" to this force, a name proposed anew by Crookes in 1871. We saw also that, as early as the year 1855, Thury had proposed the name "*psychode*" and "*ecteneic*" force. From this on, it would be impossible for us in our examination not to take into consideration this psychic force.

Up to this point, Gasparin's fluid might suffice, just as unconscious muscular action sufficed for the first three classes of facts. But starting from this fourteenth class, the psychic order plainly manifests itself (and even in the preceding class we begin already to divine its presence).

15. Mallet-blows.

I have heard — as have all other experimenters — not only sharp light raps upon a table, like those of which I have just been speaking, but mallet-blows, or blows of the fist upon a door, capable of knocking down a man if he had received them. Generally, these tremendous blows are a protestation against a denial on the part of one of the sitters. There is in them an intention, a will, an intelligence. They may also be due to the medium, who is indignant, or who is amusing himself or herself. The action is not muscular; for the hands and feet of the medium are held, and the rapping may occur some distance away from him or her.

16. Touchings.

Fraud can explain those which take place within the reach of the medium's hands, for they only occur in the darkness. But they have been felt at a certain distance beyond this reach as if the hands of the medium were prolonged.

17. Action of invisible hands.

An accordion in an open-work case, or cage, which keeps any other hand from touching it, is held in one hand by the end opposite the keys. Presently the instrument begins to lengthen and shorten of itself and plays various melodies. An invisible hand with fingers (or something like them), must therefore be acting. (Experiment of Crookes with Home.) As the reader has seen I repeated this experiment with Eusapia.

Another time, a music-box, the handle of which was turned by an invisible hand, played in perfect time with the music movements that Eusapia was making upon my cheek.

An invisible hand forcibly snatched from my hand a block of paper which I was holding out with extended arm at the height of my head.

Invisible hands removed from M. Schiaparelli's head his spectacles (furnished with a spring), which were firmly fastened behind his ears, and that so nimbly and with such light touch that he did not perceive it until afterwards.

18. Apparitions of hands.

The hands are not always invisible. Sometimes semi-luminous ones are seen to appear in the dim light,— hands of men, hands of women, hands of children. Sometimes they have clear-cut outlines. They are generally firm and moist to the touch, sometimes icy cold. At times they melt away in the hand. For my part I was never able to grasp one. It was always the mysterious hand that took mine,— often feeling through a curtain, or sometimes by nude contact, or pinching my ear, or running its fingers through my hair with great rapidity.

19. Apparitions of heads.

For my part, I have only seen two: the bearded silhouette at Monfort-l'Amaury, and the head of a young girl with high-arched forehead, in my drawing-room. In the case of the first I had believed that there was a mask held at the end of a rod. But at my own home, there was no possibility of an accomplice, and at present I am not less sure of the first instance than of the other. Moreover, the testimony of other observers is so precise and so often given that it is imperative that it be classed with my own.

20. Phantoms.

I have never seen any of these nor photographed them, but it seems to me impossible to be sceptical about that of Katie King, observed for three consecutive years by Crookes and others who experimented with the medium Florence Cook. One can scarcely doubt, also, the reality of the phantoms seen by the committee of the Dialectical Society of London. We have seen that trickery plays a frequent rôle in this sort of apparitions; but, in the experiments just mentioned, the observations were really conducted with such perspicacity that they are safe from all objection, and have on them the stamp of a purely scientific character.

These phantoms, like the heads and the hands mentioned, seem to be condensations of fluids produced by the powers of the medium, and do not prove the existence of independent spirits.

When the hand is stretched out, the rubbing of a beard can be felt upon it. This happened to me, as well as to others. Did the beard really exist, or was it only a case of tactual and visual sensations? The case here immediately following pleads in favor of its reality.

21. Impressions of Heads and of Hands.

The heads and the hands formed are sufficiently dense to leave a mould of their features and shape imprinted in the putty or the clay. Perhaps the most curious thing is that it is not necessary that these weird formations, these forces, be visible in order to produce impressions. We have seen a vigorous gesture imprint itself at a distance in clay.

22. Passing of Matter through Matter.— Transfers, or the Bringing in of Objects.

A book has been seen passing through a curtain. A bell has passed from a library-room, locked with a key, into a drawing-room. A flower has been seen passing perpendicularly downward through a dining-room table. Some have thought they had ocular proof of the mysterious appearance of plants, of flowers, of fruits, and other objects, which (as the claim went) had passed through walls, ceilings, doors.

The latter phenomenon took place several times in my presence. But I was never able to get certain proof of it under unimpeachable conditions; and I have ferreted out many a trick.

The experiments of Zöllner (a wooden ring entering into another wooden ring, a string tied at the two ends making a knot, etc.) would, of course, be a thing of exceptional interest if the medium Slade had not the bad reputation of being just a skilful prestidigitator,— a reputation probably only too well merited. I should think that there is good reason to suppose that the experiments of Crookes are authentic.

Has space only three dimensions? We will set this question aside.

23. MANIFESTATIONS DIRECTED BY AN INTELLIGENCE.

These have been already glimpsed in a certain number of the preceding cases. The forces in action here are of the psychical as well as the physical class. The question is to know whether the intellect of the medium and of the sitters is sufficient to explain everything.

In all the cases I have previously mentioned, this intellect seem to suffice, but only by attributing to it occult faculties of prodigious potency.

In the present state of our knowledge, it is impossible for us to understand the way in which mind, conscious or unconscious, can lift a table, make raps in wood, form a hand or a head, stamp an imprint. The *modus operandi* is absolutely unintelligible to us. Future science will perhaps discover it. But all these actions never overpass the limits of man's capacities, and let us admit, the capacity required is not an extraordinary one.

The hypothesis of spirits of another order than that of living human beings does not seem to be necessary.

The hypothesis of the doubling of the psychic personality of the medium is the most simple. Is it sufficient to entirely satisfy us?

Hard blows on the table like those of a fist, contrasting with gentle taps, may have this origin, in spite of appearance.

It is the same with apparitions of the hands, of heads, of spectral forms. We cannot declare this origin of the phenomena to be impossible; and it is more simple than to assume that they are due to wandering spirits.

The conveying of objects over the heads of the experimenters in complete darkness, without touching either chandelier or heads, is scarcely comprehensible. But do we understand any better how a spirit can have hands? And if it did, might it not amuse itself thus? Spectacles are taken from a face without the act being perceived; a handkerchief is removed from the neck, then snatched from between the teeth that are holding it; a fan is transferred from one pocket to another. Do latent faculties of the human organism suf-

fice to explain these intentional actions? It is right for us neither to affirm nor to deny.

I have thus passed in review the whole series of phenomena to be explained, at least all those within the limits of the plan of this work.

A first, and obviously safe, conclusion is that man has in himself a fluidic and psychic force whose nature is still unknown, but which is capable of acting at a distance upon matter and of moving the same.

This force is the expression of our will, of our desires; I mean as it appears in the first ten cases of the preceding classifications. For the other cases we must add the unconscious, the unforeseen, wills different from our conscious wills.

The force is at once physical and psychical. If the medium puts forth a force of twelve or fourteen pounds to lift a table, his weight undergoes a corresponding increase. The hand which we see forming near him is able to grasp an object. The hand really exists, and is then reabsorbed. Might we not compare the force which brings it into existence with that building-force of nature, which reproduces a claw for the lobster and a tail for the lizard? The intervention of spirits is not all indispensable.*

* It is not indispensable, even in certain cases in which it seems to be so. Let us take an example. At a séance in Genoa (1906), with Eusapia, M. Youriévich, general secretary of the Psychological Institute of Paris, besought the spirit of his father, who asserted that he was present before him in ghostly form, to give him a proof of identity by producing in the clay an impression of his hand, and above all of a finger the nail of which was long and pointed. The request was made in Russian, which the medium did not understand. Now this impression was sure enough obtained several months after, with the mark of the nail referred to. Does this fact prove that the soul of the father of the experimenter actually performed the act with his hand? No. The medium received the mental suggestion for producing the phenomenon, and did in fact produce it. The Russian language did not make any difference. The suggestion was received. Besides, the hand was much smaller than that of the man whose spirit was evoked.

The experimenter next asks his deceased father to give him his

In mediumistic experiments things happen as if an invisible being were present, able to transport the different objects through the air, usually without striking against the heads of the persons who are sitting in various parts of the room in almost complete darkness; capable also of acting upon a curtain like a strong wind, pushing it far out, able to fling this curtain over your head, giving you a Capuchin hood or coiffure, and pressing strongly against your body, as if with two nervous arms, and touching you with a warm and living hand. I have perceived these hands in the most unmistakble way. The invisible being can condense itself sufficiently to become visible, and I have seen it passing in the air. To suppose that I, as well as other experimenters, was the dupe of an hallucination is an hypothesis which cannot be maintained for a single moment and would simply show that those who entertained the idea were far more likely to have an hallucination than we were, or else that they entertained the most inexcusable prepossession and prejudice. We were in the best possible condition for observing and analysizing any phenomena whatever and no sceptic will make us believe anything different on this point.

There is certainly an invisible prolongation of the organism of the medium. This prolongation may be compared to the radiation which leaps from the loadstone to reach a bit of iron and put it into movement.

We can also compare it with the effluvium which emanates from electrified bodies.*

blessing, and he perceives a hand which makes the sign of the cross before him (in the Russian style, the three fingers together) upon the forehead, the breast, and the two sides. The same explanation is applicable here.

It was a mistake to say that this ghost and his son conversed together in the Russian tongue, as the published account said. M. Youriévich only heard some unintelligible sounds. People always exaggerate, and these exaggerations work the greatest possible harm to the truth. Why amplify? Is there not enough of the unknown in these mysterious phenomena?

* In certain countries (Canada, Colorado), a gas-jet can be lighted by holding out the finger toward it.

I also compared it some pages back to calorific waves.

When a medium makes a gesture of striking the table with his closed fist, but stops short at a distance of from eight to twelve inches, and when, at every gesture, a sonorous stroke of the fist echoes in the table, we see in that the proof of a dynamic prolongation of the arm of the medium.

When she pretends to imitate on my cheek the rotation of the crank of a music-box, and when this box keeps time with the imitated movement, stops when the fingers stop, plays the tune faster when the finger accelerates its circular tracings, goes slower when it goes slower, etc., we have here again proof of dynamic action at a distance.

When an accordion plays of its own will, when a bell begins to ring of itself, when a lever indicates such and such a pressure, there is a real force in action.

We must therefore admit, first of all, this prolongation of the muscular and nervous force of the subject. I am keenly sensible of the fact that this is a bold proposition, almost incredible, most strange and extraordinary; but after all the facts are there, and whether the matter irks us or not is a small matter.

This prolongation is real, and only extends to a certain distance from the medium, a distance which can be measured, and which varies according to circumstances. But is it sufficient to explain all the observed phenomena?

We are forced to admit that this prolongation, usually invisible, and impalpable, may become visible and palpable; take, especially, the form of an articulated hand, with flesh and muscles; and reveal the exact form of a head or a body. The fact is incomprehensible; but after so many different observations, it seems to me impossible to see in this curious phenomenon only trickery or hallucination. Logic lays its laws upon us and commands our respect.

A fluidic and condensable double has therefore the power

of gliding momentarily out from the body of the medium (for his presence is indispensable).

How can this double, this fluidic body have the consistency of flesh and of muscles? We do not understand it. But it would neither be wise nor intelligent to admit only that which we can comprehend. It must be remembered that, for the greater part of the time, we imagine we comprehend things because we can give an explanation of them; that is all. Now this explanation rarely has any intrinsic value. It is only a framework of words tacked together. Thus you fancy you understand why an apple falls from the top of the tree, because you say that the earth attracts it. This is pure simple-mindedness. For in what does the attraction of the earth consist? You know nothing about it; but you are satisfied, because the fact is a common one.

When the curtain is inflated as if pushed out by a hand, and when you feel you are pinched in the shoulder by a hand at the moment the curtain touches you, you have the impression that you are the dupe of an accomplice hidden behind the curtain. There is some one there who is playing a practical joke on you. You draw aside the curtain. Nothing!

Since it is impossible for you to admit a trick of any kind, because you, and you alone, hung that curtain between the two walls; and since you know that there is no person behind it because you are close by it and have not lost it out of your sight; and since the medium is seated near you with his, or her, hands and legs held, you are forced to admit that a temporarily materialized being has touched you.

It is certain that these facts may be denied and that they are denied. Those who have not personally verified them are excusable. It is not a question of ordinary events which take place every day and which everybody can observe. It is evident, as a general proposition, that, if we admit only

what we have ourselves seen, we shall not get very far. We admit the existence of the Philippine Islands without having been there, of Charlemagne and of Julius Cæsar without having seen them, of total eclipses of the sun, volcanic eruptions, earthquakes, etc., as facts of which we have not ourselves been eye-witnesses. The distance of a star, the weight of a planet, the composition of one of the heavenly bodies, the most marvelous discoveries of astronomy, do not excite scepticism, except in the minds of wholly uncultivated persons, because people in general appreciate the value of astronomic methods. But undoubtedly, in these psychical matters, the phenomena are so extraordinary that one is excusable for not believing them.

Nevertheless, if anyone will give himself the trouble to reason he will positively be compelled to recognize that, in following on this trail, he is inevitably brought to a stand in face of the following dilemma: either the experimenters have been the dupes of the mediums, who have uniformly cheated, or else these stupefying facts actually exist. Now since the first hypothesis is eliminated, we are forced to admit the reality of the occurrences.

A fluidic body is formed at the expense of the medium, emerges from his organism, moves, acts. What is the intelligent force that directs this fluidic body and makes it act in such or such a way? Either it is the mind of the medium, or it is another mind that makes use of this same fluid. There is no escape from this conclusion. I may remark that the meteorological conditions, fine weather, agreeable temperature, cheerfulness, high spirits, favor the phenomena; that the medium is never wholly out of touch with the manifestations, and frequently knows what is going to take place; that the cause escapes the mental grasp and is fugitive and capricious; and that the apparitions fade away like a dream as silently as they are formed.

Note also that, in important manifestations, the medium suffers, complains, groans, loses an enormous amount of force, exhibits an astonishing nervous energy, experiences hyperæsthesia, and at the apogee of the manifestation, seems for an instant to be absolutely prostrated. And, in truth, why should not his mind as well as his fluidic force be haled out of his body and be exhausted in external work? The psychical force of a living human being is able, then, to create "material" phenomena — organs, spectral figures.

But what is matter?

My readers know that matter does not exist as it is perceived by our senses. These only give us incomplete impressions of an *Unknown Reality.* Analysis shows us that matter is only a form of energy.

In the work called *A Propos d' Eusapia Paladino,* which sums up his experiments with this medium, M. Guillaume de Fontenay ingeniously tries to explain the phenomena by the dynamic theory of matter. It is probable that this explanation is one of those that make the nearest approach to the truth.

According to this theory, the quality which seems to us characteristic of matter — solidity, stability — is no more substantial than the light which strikes our eyes, or the sound which enters our ears. We see; that is to say, we receive upon the retina rays which affect it. But around and on every side of the retina undulate countless other rays that leave no impression upon it. It is the same with the other senses.

Matter, like light, like heat, like electricity, seems to be the result of a species of movement. Movement of what? Of the primitive monistic substance, quickened by manifold vibrations.

Most assuredly, matter is not that inert thing that we commonly suppose.

A comparison will aid in comprehending this. Take a common wheel. Place it horizontally on a pivot. While the wheel is motionless, let a rubber ball fall between its spokes. The ball will almost always pass through between the spokes. Now give a slight movement to the wheel. The ball will be pretty often hit by the revolving spokes, and will rebound. If we increase the rotation, the ball will now no longer pass through the wheel, which will have become for it a wholly impenetrable disc.

We can try a similar experiment by arranging the wheel vertically and shooting arrows through it. A bicycle-wheel will serve the purpose very well, owing to the slenderness of its spokes. When not in movement, the arrows will pass through it nine times out of ten. In movement, it will produce in the arrows deviations more or less marked. With increase in the speed, it would be made impenetrable, and all the arrows would be driven as if against the steel plating of an armour-clad.

These examples allow us to understand how matter is [illegible] a mode of motion, only an expression of force, a manifestation of energy. It will disappear (it must be [illegible] and force, which ends by taking refuge in the [illegible] impenetrable, and almost immaterial ether. The atom itself which was regarded as the basis of matter five years ago, has now disappeared, or rather has been decomposed and reappears as a hypothetical [illegible].

I will now repeat in regard here what I have said a hundred times elsewhere: The ether is a figurative.

The difficulty we have in explaining to ourselves apparitions, materializations, when we try to apply to them the ordinary conception of matter, is considerably lessened the moment we consider that matter is only a mode of motion.

Life itself, from the most rudimentary cell up to the most

complicated organism, is a special kind of movement, a movement determined and organized by a directing force. According to this theory, momentary apparitions would be less difficult to accept and to comprehend. The vital force of the medium might externalize itself and produce in a point of space a vibratory system which should be the counterpart of itself, in a more or less advanced degree of visibility and solidity. These phenomena can with difficulty be reconciled with the old hypothesis of the independent and intrinsic existence of matter: They better fit that of matter as a mode of motion — in a word, simple movement, giving the sensation of matter.

There is, of course, only one substance, the primitive substance, which antedates the original nebula — the womb from which all bodies in the universe have issued. The substances which the chemists take to be simple bodies — oxygen, hydrogen, azote, iron, gold, silver, etc.— are mineral elements which have been gradually formed and differentiated, just as, later, the vegetable and animal species were differentiated. And not only is the substance of the world one, but it also has the same origin as energy, and these two forms are mutually interchangeable. Nothing is lost, nothing is created, everything is transformed.*

The unique substance is immaterial and unknowable in its essence. We see and touch only its condensations, its aggregations, its arrangements; that is to say, forms produced by movement. Matter, force, life, thought, are all one.

In reality, there is only one principle in the universe, and it is at once intelligence, force, and matter, embracing all that is and all that possibly can be. That which we call matter is only a form of motion. At the basis of all is force, dynamism, and universal mind, or spirit.

* See what I formerly wrote on this subject in *Lumen*, in *Uranie*, in *Stella*, and in my *Discours sur l'unité de force et l'unité de substance*, published in *l'Annuaire du Cosmos*, for 1865.

Visible matter, which stands to us at the present moment for the universe, and which certain classic doctrines consider as the origin of all things — movement, life, thought — is only a word void of meaning. The universe is a great organism controlled by a dynamism of the psychical order. Mind gleams through its every atom.

The environment or atmosphere is psychic. There is mind in every thing, not only in human and animal life, but in plants, in minerals, in space.

It is not the body which produces life: it is rather life which organizes the body. Does not the will to live increase the viability of enfeebled persons, just as the giving up of the wish to live may abridge life and even extinguish it?

Your heart beats, night and day, whatever be the position of your body. It is a well-mounted spring. Who or what adjusted this elastic spring?

The embryo is formed in the womb of the mother, in the egg of the bird. There is neither heart nor brain. At a certain moment the heart beats for the first time. Sublime moment! It will beat in the child, in the adolescent, in the man, in the woman, at the rate of about 100,000 pulsations a day, of 36,500,000 a year, of 1,825,000,000 in fifty years. This heart that has just been formed is going to beat a thousand millions of pulsations, two thousand millions, three thousand millions, a number determined by its inherent force; then it will stop and the body will fall into ruins. Who or what wound up this watch once for all?

Dynamism, the vital energy.

What sustains the earth in space?

Dynamism, the velocity of its movement.

What is it in the bullet that kills?

Its velocity.

Everywhere energy, everywhere the invisible element. It is this same dynamism that produces the phenomena we have

been studying. The question at present resolves itself into this: Does this dynamism belong wholly to the experimenters? We have so little real knowledge of our mental nature that it is impossible for us to know what this nature is capable of producing, even in certain states of unconsciousness — in fact especially in these. The directing intelligence is not always the personal, *normal,* intelligence of the experimenters or of any one whatever among them. We ask the entity what its name is, and it gives us a name which is not ours; it replies to our questions, and usually claims to be a discarnate soul, the spirit of a deceased person. But if we drive the question home, this entity finally steals away without having given us sufficient proofs of its identity. There results from this the impression that the "medium," or principal subject of the experiment, has responded for himself, has reflected himself, without knowing it.

Moreover, this entity, this personality, this spirit, has his individual will, his caprices, his cantankerousness, and sometimes acts in opposition to our own thoughts. He tells us absurd, foolish, brutal, insane things, and amuses himself with fantastic combinations of letters, real head-splitting puzzles. It astonishes and stupefies us.

What is this being?

Two inescapable hypotheses present themselves. Either it is we who produce these phenomena or it is spirits. But mark this well: these spirits are not necessarily the souls of the dead; for other kinds of spiritual beings may exist, and space may be full of them without our ever knowing anything about it, except under unusual circumstances. Do we not find in the different ancient literatures, demons, angels, gnomes, goblins, sprites, spectres, elementals, etc? Perhaps these legends are not without some foundation in fact. Then we cannot but remark that, in our mediumistic studies and experiments, in order to succeed we always address an

invisible being who is supposed to hear us. If this is an illusion, it dates from the very origin of Spiritualism, from the raps produced unconsciously by the Fox sisters in their chambers at Hydesville and at Rochester in 1848. But once more, this personification may pertain to our own being or it may represent a mind external to ourselves.

In order to admit the first hypothesis we must admit at the same time that our mental nature is not simple, that there are in us several psychic elements, and that one at least of these elements may act unknown to ourselves, make raps in a table, move any piece of furniture, lift a weight, touch us with a hand that seems real, play an instrument, create a spectral figure, read hidden words, answer questions, act with a personal will — and all this, I repeat, without our own knowledge.

This is tolerably complicated; but it is not impossible.

That there are in us psychic elements, obscure, unconscious, capable of acting outside of the sphere of our normal consciousness, this is something we can notice every night in our dreams; that is to say, during a quarter, or a third part of our life. Scarcely has sleep closed our eyes, our ears, all our senses, than our thoughts begin to work just the same as during the day, though without rational direction, without logic, under the most incoherent forms, freed from our customary conceptions of space and time, in a world entirely different from the normal world. The physiologists and psychologists have for centuries been trying to determine the mechanism of the dream without having yet obtained any satisfactory solution of the problem. But the proved fact that we see sometimes, in our dreams, occurrences which take place at a distance, proves that we have in us unknown powers.

Again, it is not rare for each of us to experience, sometimes (all our faculties being on the alert), the play of an interior

power, distinct from our dominant reason. We are on the point of pronouncing words that are not a part of our habitual vocabulary, and ideas suddenly traverse and arrest the course of our thoughts. During the reading of a book which seemed interesting to us, our soul spreads her wings and flies to other realms, while our eyes continue in vain the mechanical act of reading. We are discussing certain projects in our mind, as if we were so many judges; and then, one would like to know in all simplicity, whence comes this distraction?

In his tireless researches, the great investigator of psychic phenomena, Myers, to whom we owe synthetic studies upon the subliminal consciousness, reached the conviction, with Ribot, that "the *me* is a co-ordination."

These supernormal phenomena (writes this competent and learned inquirer) are due not to the action of the spirits of deceased persons, as Wallace believes, but, for the most part, to the action of an incarnate spirit, either that of the subject himself or of some agent or other.*

The word "subliminal" means what is beneath the threshold (*limen*) of the consciousness,— the sensations, the thoughts, the memories, which remain at the bottom, and seem to represent a kind of sleeping *me*. I do not pretend to affirm (adds the author) that there always exists in us two *me's* correlative and parallel: I denote rather by the subliminal *me* that part of the *me* which ordinarily remains latent, and I admit that there may be not merely co-operation between these two quasi-independent currents of thoughts, but also changes of level and alternations of personality.† Medical observation (Félida, Alma) proves that there is in us a rudimentary supernormal faculty, something which is probably useless to us, but which indicates the existence, beneath the level of our consciousness, of a reserve of latent unsuspected faculties.‡

What is it that is active in us in telepathic phenomena?

* *The Human Personality*, p. 11.
† *Id.*, p. 23.
‡ *Id.*, p. 63.

We may recall the case of Thomas Garrison (*Society for Psychical Research,* VIII, p. 125) who, while sitting with his wife at a religious service, suddenly gets up in the middle of the sermon, goes out of the church, and, as if impelled by an irresistible impulse, walks twenty miles afoot to go to see his mother, whom he finds dead on his arrival, although he did not know that she was ill and although she was relatively young (fifty-eight years). I have a hundred observations similar to this in writing before me. It is not our normal habitual nature that is in action in such a case as this.

There is probably in us, more or less sentient, a sub-conscious nature, and it is this which seems to be at work in mediumistic experiences. I am pretty much of the opinion Myers expresses in the following paragraph: *

Spiritualists attribute the movement and the dictations at their séances to the action of disembodied intelligences. But if a table execute movements without being touched, there is no reason to attribute these movements to the intervention of my deceased grandfather, rather than to my own proper intervention; for if I do not see how I could have done it myself, it is not clear to me how the effect could have been produced by the action of my grandfather. As for dictations, the most plausible explanation seems to me to be for us to admit that they do not come from the conscious *me,* but from that profound and hidden region where fragmentary and incoherent dreams are elaborated.

This explanatory hypothesis is held, with an important modification, by a distinguished savant to whom also we owe long and patient researches into the obscure phenomena of normal psychology; I mean Dr. Geley, who thus sums up his own conclusions:

A certain amount of the force, intelligence, and matter of the body may perform work outside of the organism,—

* *The Human Personality,* p. 313.

act, perceive, organize, and think without the collaboration of muscles, organs, senses and brain. It is nothing less than the uplifted sub-conscious portion of our being. It constitutes, in truth, an externalizable sub-conscious nature, existing in the *me* with the normal conscious nature.*

This sub-conscious nature does not seem to depend upon the organism. It is probably anterior to it, and will survive it. It seems to be superior to it, endowed with powers and acquirements very different from the powers and acquirements of the normal, supernormal, and transcendent consciousness.

Assuredly, there is in this view of the case more than one mystery still, were it only the feat of performing a material act at a distance, and that (not less strange) of apparently having nothing to do with that kind of an act.

The first rule of the scientific method is first to seek explanations in the known before having recourse to the unknown, and we should never fail to comply with this rule. But if this method of sailing does not bring us to port, it is our duty to confess it.

I very much fear that that is what is the matter here. We are not satisfied. The explanation is not clear, and is floating a little too much at random in the waves — and the wavering uncertainty — of the hypothesis.

At the point at which we have now arrived in this chapter of explanations we are precisely in the position of Alexander Aksakof when he wrote his great work, *Animism and Spiritualism,* in reply to the book of Dr. von Hartmann on *Spiritualism.* Hartman claimed to explain all of these psychical phenomena by the following hypothesis.

A nervous force producing, outside of the limits of the human body, mechanical and plastic effects.

Duplicate hallucinations of this same nervous force, and producing also physical and plastic effects.

* *The Subconscious Nature,* p. 82.

somnambulistic consciousness, capable (the sub- ing in his normal state) of reading in the intellectual ound of another man, his present and his past, and s able to divine the future.

Akaskof tried to see if these hypotheses (the last of which pretty bold one) are sufficient to explain everything, and concludes that they are not. That is also my opinion. re is something [illegible] mething else, this residue he bottom of the cr[illegible]xperiment, is a psychic ele- t, the nature of w[illegible]s still wholly hidden from I think that all the [illegible]of this book will share my iction.

nthropomorphic [illegible]are far from explaining rything. Besides, they are [illegible] hypotheses. We must not nide from ourselves that these phenomena introduce us into another world, into an unknown world, one that is still to be explored in its whole extent.

As to beings different from ourselves,— what may their nature be? Of this we cannot form any idea. Souls of the dead? This is very far from being demonstrated. The innumerable observations which I have collected during more than forty years all prove to me the contrary. No satisfactory identification has been made.*

The communications obtained have always seemed to proceed from the mentality of the group, or, when they are heterogeneous, from spirits of an incomprehensible nature. The being evoked soon vanishes when one insists on pushing him to the wall and having the heart out of his mystery. And then my greatest hope has been deceived, that hope of my twentieth year, when I would so gladly have received celestial light upon the doctrine of the plurality of worlds. The spirits have taught us nothing.

* See my remarks in *The Unknown*, pp. 290–294.

Nevertheless, the agents seem sometimes to be independent. Crookes mentions having seen Miss Fox write automatically a communication for one of her sitters while another communication upon another subject was given to her for a *second* person by means of the alphabet and by raps, and all the while she was chatting with a *third* person upon another subject totally different from the other two. Does this remarkable fact prove with certainty the action of a spirit other than that of the medium?

The same scientist mentions that, during one of his séances, a little rod crossed the table, in full light, and came and rapped his hand, giving him a communication by following the letters of the alphabet spelled out by him. The other end of the rod rested on the table at a certain distance from the hand of the medium Home.

This case seems to me, as well as to Crookes, more conclusively in favor of an exterior spirit, so much the more since the experimenter having asked that the raps be given by the Morse telegraphic code, another message was thus rapped out. I also remember that the learned chemist mentions that the word "however" hidden by his finger, upon a newspaper, and unknown even to himself, was rapped out by a little rod.

Wallace also mentions a name written upon a piece of paper fastened by him under the central leg of the experiment table; Joncières, a water-color correctly painted in complete darkness, and a musical theme written with a pencil; M. Castex Dégrange, the announcement of a death, and the place where a lost object might be found. We have also seen sentences dictated either backwards or in such a way that every other letter only must be read to get the sense, or else by strange combinations showing the action of an unknown intellect. We have a thousand examples of this kind.

But if the mind of the medium may liberate itself and

ar as an extra-normal state, why might it not be this
d which acts? Do we not have several distinct person-
es in our dreams? If they could dynamically appear,
uld they not act somewhat in this way?

We ought not to lose sight of the fact that these phenomena
of a mixed character. They are at once physical and
hical, material and intellectual, are not always produced
our conscious will, and are rather the subject of *observa-*
n than *experiment*.

It is expedient to insist on this characteristic. I one day,
nuary 31, 1901) heard uclaux, member of the In-
ute, director of the Institute, express the fol-
ing confused idea (an idea l by so many physicists and
many chemists), in a comp which was yet quite com-
petent to discuss these phenomena: "There is no scientific
fact except a fact which can be reproduced at will." * What
a singular reasoning! The witnesses of the fall of a meteor
bring us an aërolite which has just fallen from the sky and
been dug up, all hot, from the hole it had made in the
ground. "Error! illusion!" we ought to reply: "We shall
only believe when you repeat the experiment."

They bring to us the body of a man killed by a stroke of lightning, stripped of his clothes, and shaved as if with a razor. "Impossible!" we ought to reply; "pure invention of your deluded senses." A woman sees appear before her, her husband, who has just died nearly two thousand miles away. We are asked to believe that this is not so, and will not be so until the apparition appears a second time.

This confusion between observation and experiment is a very strange thing as coming from cultivated men.

In psychical phenomena there is a voluntary, capricious, incoherent, intellectual element.

I repeat, we must learn to comprehend that everything

* See *Bulletin of the Psychological Institute*, Vol. I. pp. 25–40.

cannot be explained and resign ourselves to waiting for an extension of our knowledge. There is intelligence, thought, psychism, mind, in these phenomena. There is still more in certain communications. Can the observations be confirmed and justified by assuming the mind of the living merely as the active agents? Yes, perhaps, but only by attributing to us unknown and supernormal faculties. Yet it must be remembered that this is only an hypothesis. The Spiritualistic hypothesis of communication with the souls of the dead remains also as a working hypothesis.

That souls survive the destruction of the body I have not the shadow of a doubt. But that they manifest themselves by the processes employed in séances the experimental method has not yet given us absolute proof. I add that this hypothesis is not at all likely. If the souls of the dead are about us, upon our planet, the invisible population would increase at the rate of 100,000 a day, about 36 millions a year, 3 billions 620 millions a century, 36 billions in ten centuries, etc.,— unless we admit re-incarnations upon the earth itself.

How many times do apparitions, or manifestations occur? When illusions, auto-suggestions, hallucinations, are eliminated, what remains? Scarcely anything. Such an exceptional rarity as this pleads against the reality of apparitions.

We may suppose, it is true, that all human beings do not survive their death, and that, in general, their psychical entity is so insignificant, so wavering, so ineffectual, that it almost disappears in the ether, in the common reservoir, in the environment, like the souls of animals. But thinking beings who have the consciousness of their psychical existence do not lose their personality, but continue the cycle of their evolution. It would seem natural therefore to see them manifest themselves under certain circumstances. Persons condemned to death, in consequence of judicial errors, and executed, should they not return to protest their innocence?

uld it not be reasonable to suppose that persons put to death such a way that violence was not suspected would return accuse the assassins? Knowing the characters of Robespierre, of Saint-Just, of Fouquier-Tinville, I should like to e seen them revenge themselves a little on those who triphed over them. The victims of '93, should they not have rmed to disturb the sleep of the conquerors? Out of the nty thousand citizens shot fusillades during the time the Commune of Paris I sh d like to have seen a dozen ssingly harassing the Hon. M. Theirs, who was really puffed up and vain-gl over his having first perred the organization insurrection and then punhed it.

Why do not children whose death is lamented by their parents ever come to console them? Why do our dearest attachments seem to disappear forever? And how about last wills and testaments stolen away, and the last will of the dead ignored and their intentions purposely misinterpreted?

"It is only the dead that do not return," says an old proverb. This aphorism is not of absolute application, perhaps; but apparitions are rare, very rare, and we do not understand their precise nature. Are they actual apparitions of the dead? It is not yet demonstrated.

Up to this day, I have sought in vain for certain proof of personal identity through mediumistic communications. And then one does not see why spirits, if they exist around us, should have need of mediums at all, in order to manifest themselves. They surely must form a part of nature, of the universal nature which includes all things.

Nevertheless, it seems to me that the Spiritualistic hypothesis should be preserved by the same right as those I have summed up in the immediately preceding pages, for the discussions have not eliminated it.*

* Quite recently I saw an account of some phenomena which rather

But why are there manifestations the result of the grouping of five or six persons around the table? That this should be a *sine qua non* is not a very likely thing either.

It may be, it is true, that spirits exist around us, and that it is normally impossible for them to make themselves visible, audible, or tangible, not being able to reflect rays of light accessible to our retina, or to produce sonorous waves, or to effect touches. Therefore, certain conditions present in mediums might be necessary for their manifestation. Nobody has the right to deny this. But why so many puzzling incoherences and solecisms?

I have on a bookshelf before me several thousand communications dictated by "spirits." In the last analysis, a dim obscurity remains hanging over the causes. Unknown psychic forces: fugitive entities; vanishing figures; nothing solid to grasp, even for the thought. These things do not yield us the consistency of a definition of chemistry or of a theorem in geometry. A molecule of hydrogen is a granite cliff in comparison.

The greater part of the phenomena observed,— noises, movement of tables, confusions, disturbances, raps, replies to questions asked,— are really childish, puerile, vulgar, often ridiculous, and rather resemble the pranks of mischievous boys than serious bona-fide actions. It is impossible not to notice this.

Why should the souls of the dead amuse themselves in this way? The supposition seems almost absurd.

We know that an ordinary man does not change his intellectual or moral value from day to day, and, if his spirit con-

plead in its favor than otherwise (*Bulletin of the Society for Psychical Studies of Nancy*, Nov.–Dec., 1906). Out of the eleven instances mentioned, the first and the second may have been taken from a cyclopedia, the third and the fourth from public journals; but, in the case of the seven others, the admission of the identity of apparitions with the originals they purported to represent is surely the best explanatory hypothesis.

tinues to exist after the death of his body, we may expect to find it such as it was before. But why so many oddities and incoherences?

However these things may be, it behooves us not to have any preconceived idea, and our bounden duty is to seek to prove the facts as they present themselves to us.

The unknown natural force brought into play for the lifting of a table is not the exclusive property of mediums. In different degrees it forms a part of all organisms, with different coefficients, 100 for organisms such as those of Home, or Eusapia, 80 for others, 50 or 25 for less favored individuals. But I should hold it as certain that it never drops in any case to 0. The best proof of this is that, with patience, perseverance, and the exercise of the will, almost all the groups of experimenters who have seriously occupied themselves with these researches have succeeded in obtaining, not merely movements, but also complete levitations, raps, and other phenomena.

The word "medium" scarcely has any longer a reason for being, since the existence of an intermediary between the spirits and us is not yet proved. But still the word may be preserved, logic being the rarest of things in grammar and in everything else that is human. The word "electricity" has had no connection for a long time with amber (*ἤλεκτρον*), nor the word "veneration" with the genitive case of Venus (*Veneris*), nor the (at first astrological) term "disaster" with *aster* (star), nor the word "tragedy" with *goat-song* (*τράγος, ᾠδή*). But this does not hinder these words from being understood in their habitual sense.*

* As a forestalling of judgment on what is yet to be demonstrated, the word "medium" is a wholly improper term. It takes it for granted that the person endowed with these supra-normal psychic faculties is an intermediary between the spirits and the experimenters. Now while we may admit that this is sometimes the case, it is certainly not always

As respects explanatory hypotheses, I repeat, the field is open to all. It is to be noted that communications dictated are closely related to the condition of mind, the ideas, the opinions, the beliefs, the knowledge, and even the literary culture, of the experimenters. They are like a reflection, or counterpart, of this ensemble of ideas and faculties. Compare the communications noted down in the house of Victor Hugo in Jersey, those of the Phalansterian Society of Eugéne Nus, those of astronomical meetings, those of religious believers,— Catholics, Protestants, etc.

If the hypothesis were not so bold as to seem unacceptable to us, I should dare to think that the concentration of the thoughts of psychic experimenters creates a momentary intellectual being who replies to the questions asked and then vanishes.

Reflection, reflex action? That is perhaps the true expression. Everybody has seen his image reflected in a mirror, and nobody is astonished by it. However, analyse the thing. The more you look at this optical being moving there behind the mirror, the more remarkable the image appears to you. Now suppose looking-glasses had not been invented. If we had not knowledge of those immense mir-

so. The rotation of a table, its tipping, its levitation, the displacement of a piece of furniture, the inflation of a curtain, noises heard — all are caused by a force emanating from this protagonist of the company, or from their collective powers. We cannot really suppose that there is always a spirit present ready to respond to our fancies. And the hypothesis is so much the less necessary since the pretended spirits do not impart any new facts to us. For the greater part of the time, it is undoubtedly our own psychic force that is acting. The chief personage and principal actor in these experiments would be more accurately called a *dynamogen*, since he (or she) creates force. It seems to me that this would be the best term to apply in this case. It expresses that which is proved by all the observations.

I have known mediums very proud of their title, and sometimes found them a bit jealous of their fellows. They were convinced that they had been chosen by Saint Augustine, Saint Paul, and even Jesus Christ. They believed in the grace of the Most High and claimed (not without reason too) that, coming from other hands, these signatures were to be suspected. There is no sense in these rivalries.

rors which reflect whole apartments and the visitors in them, if we had never seen anything of the kind, and if someone should tell us that images and reflections of living persons could thus manifest themselves and thus move, we should not comprehend, and should not believe it.

Yes, the ephemeral personification created in Spiritualistic séances sometimes recalls the image that we see in a mirror, which has nothing real in itself, but which yet exists and reproduces the original. The image fixed by the photograph is of the same kind, only durable. The potential image formed at the focus of the mirror of a telescope, invisible in itself, but which we can receive on a level mirror and study, at the same time enlarging it by the microscope of the eye-piece, perhaps approaches nearer to that which seems to be produced by the concentration of the psychical energy of a group of persons. We create an imaginary being, we speak to it, and in its replies it almost always reflects the mentality of the experimenters. And just as with the aid of mirrors we can concentrate light, heat, ether-waves, electric waves, in a focus, so, in the same way, it seems sometimes as if the sitters added their psychic forces to those of the medium, of the dynamogen, condensing the waves, and helping to produce a sort of fugitive being more or less material.

The sub-conscious nature, the brain of the medium, or his astral body, the fluidic mind, the unknown powers latent in sensitive organisms, might we not consider these as the mirror which we have just imagined? And might this mirror also not receive and reproduce impressions, or influence, from a soul at a distance?

But we must not generalize partial conclusions which we have already had much trouble in defining.

I do not say that spirits do not exist: on the contrary, I have reasons for admitting their existence. Even certain

sensations expressed by the animals,— by dogs, by cats, by horses,— plead in favor of the unexpected and impressive presence of invisible beings or agents. But, as a faithful servant of the experimental method, I think that we ought to exhaust all the simple, natural hypotheses, already known, before having recourse to others.

Unfortunately, a large number of Spiritualists prefer not to go to the bottom of things, or analyse anything, but to be the dupes of nervous impressions. They resemble certain worthy women who tell their beads while believing that they have before them Saint Agnes or Saint Filomena. There is no harm in that, says some one. But it is an illusion. Let us not be its dupes.

If the elementals, the *élémentaires,* the spirits of the air, the gnomes, the spectres of which Goethe speaks (following Paracelsus in this), exist, they are natural and not supernatural. They are in nature, for nature includes all things. The supernatural does not exist. It is then the duty of science to study this question as it studies all others.

As I have already remarked, there are in these different phenomena several causes in action. Among these causes the ones that supposes the action to proceed from disembodied spirits, the souls of the dead, is a plausible hypothesis which ought not to be rejected without examination. It seems sometimes to be the most logical; but there are weighty objections to it, and it is of the highest importance to be able to demonstrate it with certainty. Its partisans *ought to be the first to approve the severity of the scientific methods which we apply in our studies of the phenomena,* for Spiritualism will receive thereby so much the more solid a foundation and will have so much the more value. The illusions and the artless faith of simple souls cannot give it any more solid and substantial basis. The religion of the future will be the religion of science. There is only one kind of truth.

Sometimes attempts are made to say that which they have never said. For my part, I have had frequent proof of this, notably in the case of Spiritualism. I should not be surprised if certain misinterpretations of the pages which precede should come to light, tending to the opinion that I do not believe in the existence of spirits. Yet it will be impossible to find any affirmation of this kind in this work, or in any other published by me. What I say is that the physical phenomena studied in these pages *do not prove* the existence of spirits, and may probably be explained without them,—that is, by unknown forces emanating from the experimenters, and especially from mediums. But these phenomena indicate, at the same time, the existence of a psychical atmosphere or environment.

What is this environment? It is indeed very difficult to [illegible] we are not able to apprehend it by [illegible] It is also very difficult not to admit it in [illegible] If we admit [illegible] what becomes of these souls? [illegible] It must be replied that the conditions of [illegible] which we call material senses exist in an [illegible] the real nature of space and time, that our ordinary [illegible] are essentially relative, that the soul [illegible] the universe does not occupy space. Still [illegible] that pure spirit does not exist, that [illegible] a spiritual organism a certain point. We [illegible] that all souls are not equal, that there is [illegible] that certain human beings are [illegible] that superior souls, be[illegible] as well after death as during life, pre[illegible] have the power of manifesting [illegible] from which it would add[illegible] [illegible] by successive mi[illegible] [illegible] the conditions under which they

more advanced the day after death than the day before? Why should death bestow upon them any perfection? Why should it make a genius out of an imbecile? How could it make a good man out of a bad one? Why should it turn an ignoramus into a wise man? How could it make a shining light out of an intellectual nobody?

These unconscious souls,— that is to say, the multitude,— do they not disappear at death into the surrounding ether, and do they not constitute a kind of psychic atmosphere, in which a subtle analysis can discover spiritual as well as material elements? If the psychic force performs an action in the existing order of things, it is as worthy of consideration as the different forms of energy in operation in the ether.

Without, then, admitting the existence of spirits to be demonstrated by the phenomena, we feel that these do not all belong to a simply material order,— physiological, organic, cerebral,— but that there is *something else* involved, something else inexplicable in the actual state of our knowledge.

But a something else of the psychical order. Perhaps we shall be able to go a little farther, some day, in our independent impartial researches, guided by the experimental scientific method, denying nothing in advance, but admitting whatever is proved by sufficient observation.

To sum up: *In the actual state of our knowledge it is impossible to give a complete, total, absolute, final explanation of the observed phenomena.* The Spiritualistic hypothesis ought not to be dismissed. Still, we may admit the survival of the soul without necessarily admitting a physical communication between the dead and the living. But then all the observed facts leading up to the affirmation of this communication are worthy of the most serious attention of the philosopher.

One of the chief difficulties in the way of these communi-

cations seems to be the condition itself of the soul freed from bodily senses. It would have other ways of perceiving. It would not see, hear, touch. How then can it enter into relation with our senses?

There is a whole problem in that which is not to be neglected in the study of any psychical manifestations whatever.

We take our ideas to be realities. This is a mistake. For example, to our senses the air is not a solid body; we pass through it without effort, while we cannot pass through an iron door. The converse is true of electricity: it passes through iron, and finds the air to be a solid impassible body. To the electrician, a wire is a canal leading electricity across the solid rock of the air. Glass is opaque to electricity and transparent to magnetism. The flesh is transparent to the X-rays, while glass is opaque, etc.

We feel the need of explaining everything, and we are driven to admit only the phenomena of which we have had an explanation; but that does not prove that our explanations are valid. Thus for example, if some one had affirmed the possibility of instantaneous communication between Paris and London, before the invention of the telegraph, people would have regarded the assertion as utopian. Later it would not have been admitted, except on condition of the existence of a wire between the two stations, and any communication without the medium of an electric wire would have been declared impossible. Now that we have wireless telegraphy we can apply this discovery to the explanation of the phenomena of telepathy. But it is not yet proved that this explanation is the true one.

Why do we wish to explain these phenomena at all hazards? Because we naïvely imagine that we are able to do so in the present state of our knowledge.

The physiologists who claim to see daylight in this matter are like Ptolemy persisting in accounting for the move-

ments of the heavenly bodies by holding to the idea of the immobility of the earth; or Galileo explaining the attraction of amber by the rarefaction of the surrounding air; or Lavoisier seeking (with the common people) the origin of aërolites in thunder storms or denying their existence; or Galvani, who saw in his frogs a *special* organic electricity. I put my physiologists in good company, surely, and they have nothing of which to complain. But who does not feel that this natural propensity to explain everything is not justified, that science progresses from age to age, that what is not known to-day will be known later, and that we ought sometimes to know how to wait?

The phenomena of which we are speaking are manifestations of the universal dynamism, with which our five senses put us very imperfectly in relation. We live in the midst of an unexplored world, in which the psychical forces play a rôle still very insufficiently investigated.

These forces are of a class superior to the forces usually analyzed in mechanics, in physics, in chemistry: they are of the psychical order, have in them something vital and a kind of mentality. They confirm what we know from other sources,— that the purely mechanical explanation of nature is insufficient and that there is in the universe something else than so-called matter. It is not matter that rules the world: it is a dynamic and psychic element.

What light will the study of these still unexplained forces shed upon the origin of the soul and upon the conditions of its survival? That is something that the future has to teach us.

The truth that the soul is a spiritual entity distinct from the body is proved by other arguments. These arguments are not made for the purpose of injuring this doctrine; but while confirming it and while putting in clear light the application of psychic forces, they still do not solve the great problem by the material proofs that we should like to have.

However, if the study of these phenomena has not yet yielded all that is claimed for it, nor all that it will in the future yield, we still cannot help recognising that it has considerably enlarged the sphere of psychology, and that the knowledge of the nature of the soul and of its faculties has been once for all expanded under grander and deeper skies and wider horizons.

There is in nature, especially in the domain of life, in the manifestation of instinct in vegetables and animals, in the general soul of things, in humanity, in the cosmic universe, a psychic element which appears more and more in modern studies, especially in researches in telepathy, and in the observation of the unexplained phenomena which we have been studying in this book. This element, this principle, is still unknown to contemporary science. But, as in so many other cases, it was divined by the ancients.

Besides the four elements fire, water, air and earth, the ancients admitted a fifth, belonging to the material order, which they named *animus,* the soul of the world, the animating principle, ether. "Aristotle" (writes Cicero, *Tuscul. Quaest.* I. 22), "after having mentioned the four kinds of material elements, believes that we ought to admit a fifth kind from which the soul proceeds; for, since the soul and the intellectual faculties cannot reside in any of the material elements, we must admit a fifth kind, which had not yet received a name and which he styles *entelechy;* that is to say, eternal and continued movement." The four material elements of the ancients have been dissected by modern analysis. The fifth is perhaps more fundamental.

Citing the philosopher Zeno, the same orator adds that this wise man did not admit this fifth principle, which might be compared to fire. But, from all the evidence, fire and thought are two distinct things.

Virgil has written in the *Æneid* (Book VI) these admirable verses which are known to everybody:

> Principio cœlum ac terras camposque liquentes
> Lucentemque globum Lunae Titaniaque astra
> Spiritus intus alit, totamque infusa per artus
> MENS AGITAT MOLEM, *et magno se corpore miscet.*

Martianus Capella, like all the authors of the first centuries of Christianity, mentions this directive force, also calling it the fifth element, and furthermore describes it under the name "ether."

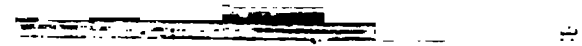
A Roman emperor, well known to the Parisians, since it was in their city (in the palace built by his grandfather near the present *Thermes,* or old Roman baths) that he was proclaimed emperor in the year 360 (I mean Julian, called the Apostate), celebrates this fifth principle in his discourse in honor of the "The Sun, the Monarch," * styling it sometimes the solar principle, sometimes the soul of the world, or intellectual principle, sometimes ether, or the soul of the physical world.

This psychical element is not confounded by the philosophers with God and Providence. In their eyes, it is something which forms part of nature.

One more word before closing. Human nature is endowed with faculties as yet little explored, that the observations made with mediums, or dynamogens, bring to light — such as human magnetism, hypnotism, telepathy, clairvoyance, and premonition. These unknown psychic forces are worthy of being embraced within the scope of scientific analysis. At present they have been almost as little studied as in the time of Ptolemy, and have not yet found their Kep-

* See the *Complete Works of the Emperor Julian,* Paris, 1821. Vol. I. p. 375.

ment the essential nature of which is still hidden from us. I shall be happy for my part, if I have helped to establish by these two works the above important principle, exclusively based upon the scientific verification of certain phenomena studied by the experimental method.



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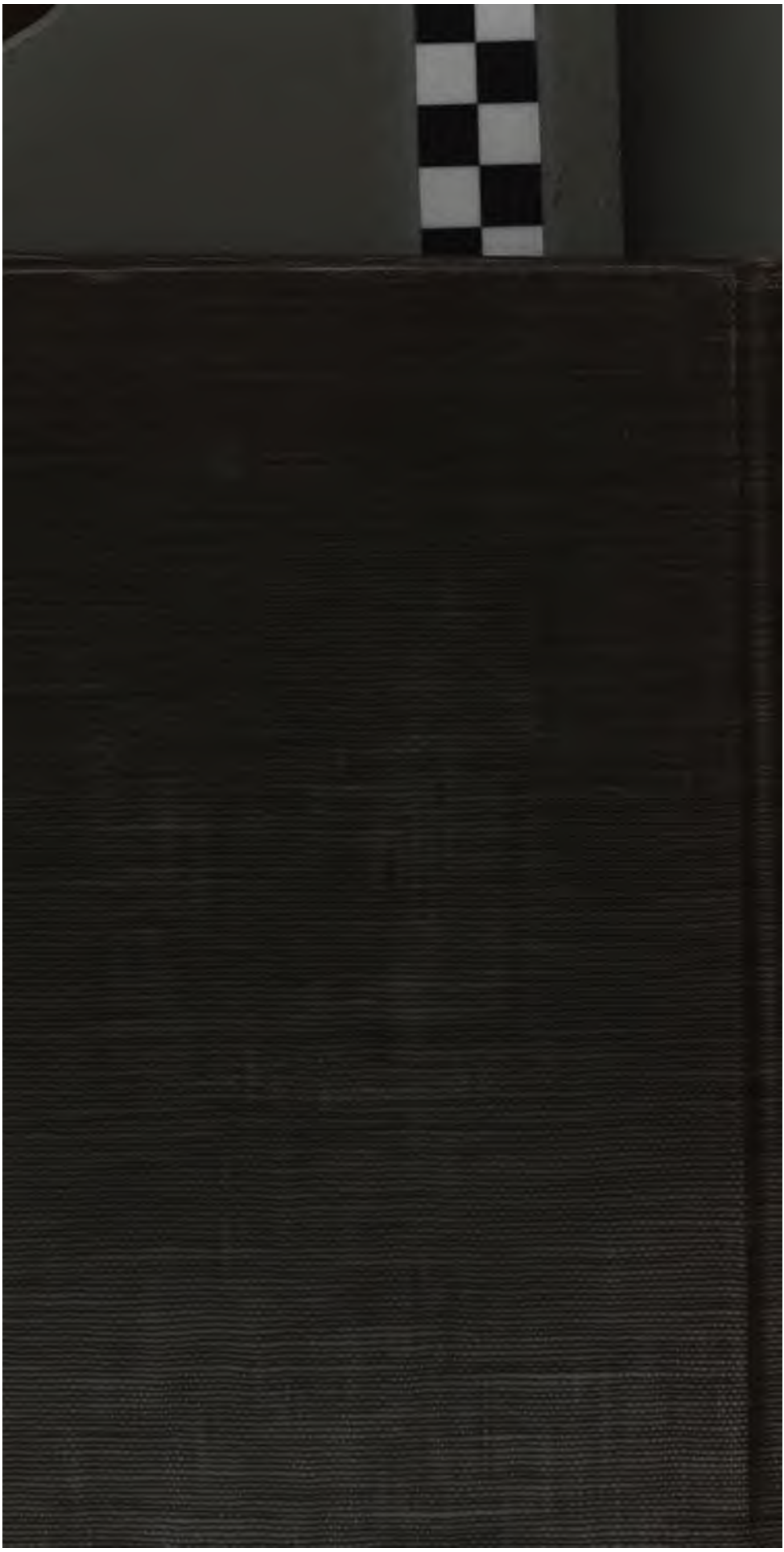
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